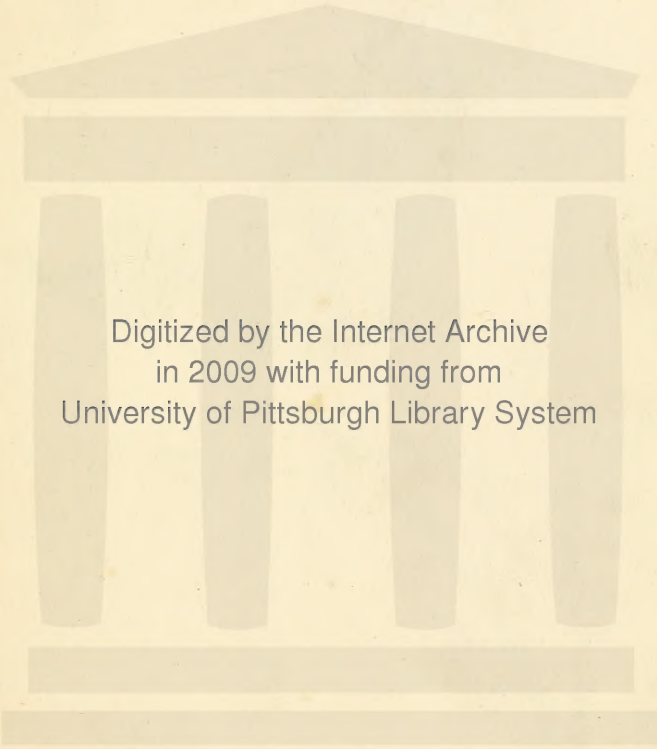


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The Mexican Jay

Geo. G. White, del.

Cyanocorax luxuosus (Less.)

Lith. Printed & Col^d by J. T. Bowen Philad^a

ILLUSTRATIONS

OF THE

BIRDS

OF

CALIFORNIA, TEXAS, OREGON, BRITISH AND
RUSSIAN AMERICA.

INTENDED TO CONTAIN DESCRIPTIONS AND FIGURES

OF ALL

North American Birds

NOT GIVEN BY FORMER AMERICAN AUTHORS,

AND A

GENERAL SYNOPSIS OF NORTH AMERICAN ORNITHOLOGY.

BY

JOHN CASSIN,

MEMBER OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA; OF THE AMERICAN PHILOSOPHICAL
SOCIETY; OF THE HORTICULTURAL SOCIETY OF PENNSYLVANIA; OF THE NATIONAL INSTITUTE;
OF THE SOUTH CAROLINA NATURAL HISTORY SOCIETY; OF THE NEW YORK
LYCEUM OF NATURAL HISTORY; OF THE NATURAL HISTORY
SOCIETY OF MONTREAL, ETC. ETC.

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1862.

P R E F A C E.

THE NATURAL HISTORY OF NORTH AMERICA has been regarded with especial interest wherever the sciences have been cultivated since the discovery of the continent. There never has been a period, however, in which such extensive and productive research has been carried on, as in that which commenced with the annexation of Texas to the United States, and in which also California and New Mexico have become parts of the Union. The extension of the laws of the United States over these vast countries, and the consequent protection and personal safety, have induced the visits of scientific travellers;—numerous Government expeditions for the purposes of exploration and survey have been necessary, and have been despatched on such missions with the utmost promptness and vigilance of the public good by all administrations of the General Government, in the period to which we allude, and have almost invariably been accompanied by officers specially charged with making observations and collections in Natural History. The Smithsonian Institution also has exerted an influence in the highest degree favorable and important in the development of the Natural History of this country, as in other departments of science and literature.

These are the main and immediate causes of the great strides that the knowledge of the natural productions of North America has made within a period of little upwards of twenty years. There are, of course, others, of which the general diffusion of knowledge and attention to education in the United States especially, and in fact throughout the civilized world, have been perhaps the most efficient.

Since the time of the publication of the works of our predecessors in American Ornithology, the additions of species and of information in that department of our Zoology have been very large, and being for much the greater part within our reach, we have been induced to undertake the present work. It is to be regarded

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in some measure as an addition to the works of former authors in American Ornithology, but at the same time complete in itself.

Our advantages for study have been much superior to those possessed by former writers in America. There never was in the United States, until within the last ten years, a library of Natural History, approximating in any considerable degree to completeness, nor affording the necessary facilities for the study of Ornithology. Nor until within that period was there any collection sufficiently comprehensive to answer the purposes of comparison and general research. In various branches of Natural History, but especially in Ornithology, these most important and desirable objects have been fully accomplished in the formation of the Library and Museum of the Academy of Natural Sciences of Philadelphia,—a result for which science is indebted, not to the Government, nor to public patronage of any kind, but to strictly private enterprise and individual scientific taste.

A new era in the history of the zoological sciences in the United States commenced with the purchase and importation of the late General Massena's collection of Birds into this country in 1846, by Thomas B. Wilson, M. D., of Philadelphia, and the commencement at the same period of a library in Natural History by the same gentleman and his brother, Mr. Edward Wilson, now residing in England. Both have been continued without intermission to the present time, and the results have been, so far as relates to Ornithology, that a most extensive collection has been formed, now numbering about twenty-five thousand specimens, and a Library containing very nearly every book relating to this branch of natural science, of which copies are to be obtained; and also, principally through the personal exertions of the latter-named gentleman, in the cities of Europe, many that are of exceeding rarity and value. In several other departments, also, nearly or quite as complete collections of books and specimens have been made. To Fossil Remains, Conchology, and Crustacea, these remarks are especially applicable.

Citizens who thus devote themselves to the advancement of science and intellectual cultivation in their country,—whose exertions tend so immediately to elevate it in the scale of civilization and refinement, deserve to be ranked with its most illustrious scholars,

statesmen, and soldiers, and are equally entitled to the national gratitude. So long as the condition of, or progress in the arts and sciences shall continue to characterize nations, the influence in the United States of the gentlemen to whom we have alluded, must be regarded as important in the highest degree, and their services will be gratefully remembered by their countrymen so long as the sciences are cultivated or appreciated. They have reared in their native city a monument to Natural Science as enduring as its influence in the minds of men, and more honorable to themselves than the proudest obelisk or the richest memento of the conqueror's triumph.

With such facilities for study, we have necessarily had advantages over other American Ornithologists. One object of our work is to present a general revision of the Ornithology of the United States, endeavoring to bring our subject nearer to the true state of the science than has been previously attempted in this country. In our Synopsis, the student will find many corrections and additions, and will find himself, too, very probably introduced to names both American and European, of the connection of which with North American Ornithology, previous records are silent, quite unjustifiably.

Our predecessors have not been well versed in the history and bibliography of Ornithology, nor indeed have they professed such information. It is in fact a description of knowledge to be attained with difficulty in any country,—so great, indeed, that no one Ornithologist has ever yet been completely acquainted with the bibliography of his science.

To our publishers, Messrs. J. B. Lippincott & Co., is due our gratitude for constant kindness and encouragement during the publication of the present volume. Our treatment by the members of this eminent firm has in fact most fully demonstrated to us their deep interest in the Natural Sciences, as gentlemen of taste and cultivation, quite irrespective, so far as relates to our work, of merely business considerations.

To the kind friends whose contributions have added so much to the interest of this volume, we have to express our sense of great obligation, especially to Col. George A. McCall, Capt. J. P. McCown, Capt. S. G. French, Dr. T. C. Henry, of the U. S. Army, to Mr.

John G. Bell, Dr. A. L. Heermann, Dr. P. R. Hoy, Dr. S. W. Woodhouse, Mr. John H. Clark, Dr. Charles Pickering, and Dr. C. B. R. Kennerly.

To Dr. A. Hall, of Montreal, and Dr. R. Haymond, of Brookville, Indiana, for much valuable information relating to the birds of their districts.

To Professor J. P. Kirtland, Dr. Thomas M. Brewer, Professor S. F. Baird, and Mr. Robert Kennicott, we have also to express our gratitude for very important services, in facilitating the circulation of our work, and for much information and assistance.

For facilities for the examination and comparison of specimens we gratefully acknowledge our obligations to the gentlemen of the Academy of Natural Sciences of Philadelphia; to Professor Joseph Henry and Professor S. F. Baird, of the Smithsonian Institution; to the Natural History Society of South Carolina; to Mr. Edward Harris, to the Rev Dr. Bachman, to Mr. John Krider, to Mr. Geo. N. Lawrence, and to Mr. J. P. Giraud.

Of the superior execution of the plates of our work, it is perhaps unnecessary for us to speak, but in justice to Mr. J. T. Bowen, and Mr. W. E. Hitchcock, we may be allowed to say that we regard them as having in this volume fully established a degree of excellence in the production of zoological plates, rarely excelled, if equalled, in this country.

Though we hope and fully intend to proceed with a second series of this work, as materials accumulate, especially as the present volume has met with a degree of patronage much greater than we had any right or reason to expect, we have to say to our friends and patrons, that at present we have no definite prospect of such continuation. Should we be favored with life and health, we hope to present two additional volumes or series, each, like the present, complete in itself, for which very nearly a sufficient number of birds are now known as inhabiting the United States, and which are not given by former authors on North American Ornithology. At present, our engagements, we regret to say, render such an undertaking quite impossible.

JOHN CASSIN.

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ILLUSTRATIONS OF THE BIRDS

OF
CALIFORNIA, TEXAS, OREGON, AND BRITISH AND
RUSSIAN AMERICA.

CYANOCORAX LUXUOSUS.—(LESSON.)

THE MEXICAN JAY.

PLATE I.—ADULT MALE.

THE family of birds, familiarly known as Jays, is so extensively diffused, that every country of the world produces species except Africa south of the Great Desert, Australia, and the islands in the Pacific ocean.

The European species are few in number, but that which is the most common and well known by the name from which has been derived the popular appellation now applied to nearly all of its more or less nearly allied relatives, is justly regarded as one of the most remarkable of the birds of that continent. It is the only species of this family which inhabits central Europe and the British Islands, and is much admired on account of the beauty of its plumage, which is for the greater part of a very handsome light reddish brown, with its wings richly colored of a beautiful light blue and a deep black. It is a cunning, cautious bird, and possesses very considerable powers of imitation and of voice in general. Nearly all the European ornithologists relate instances of specimens which they had seen in a state of domestication, some of which had been taught, not only to articulate words but also to imitate various sounds and the cries of animals. Bewick mentions one which would call a dog, and another which could imitate the noise made by a saw. Others have heard it imitate the mewing of a cat, the notes of other birds, and even the neighing of a horse. In

Germany, where the taming and rearing of birds is made a matter of business to a much greater extent than we have any examples of in the United States, the Jay is a great favorite on account of this talent, or in some measure for the same reason that the Mocking bird is in this country. It does not appear, however, to possess the talent for accurate imitation, nor the taste nor talent for combination which is shown in such an eminent degree by the famous songster of this country, but to evince imitative instincts more similar to those of the Parrots.

Other Jays, of very handsome plumage, inhabit Asia, from the northern regions of which continent, as well as from northern Africa, a few species visit Europe. They are not abundant in either of the first mentioned continents.

The birds of this group are most numerous in America. In the higher northern latitudes and in the eastern parts of the United States, a few species only are found; several others, of which some account will be found in the present work, and some of which are very handsome and remarkable species have as yet to be regarded as exclusively western, having only been observed in the countries on the Pacific seaboard. We beg the liberty of saying, however, in passing, that it is as yet quite impossible to define, in any reliable manner, the limits of the range of any of the birds usually regarded as exclusively inhabiting the Western States and territories of the United States, so vast a central region having been but very imperfectly explored, and which yet presents to the enterprising scientific traveller one of the most interesting regions for research on the face of the globe. It comprises the entire range of country from the Mississippi river to beyond the Rocky Mountains, from the northern to the southern limits of the United States.

In Mexico and thence southward to Brazil and Patagonia, and, in fact, throughout South America, many species of Jays are to be met with in abundance, and of such beautiful plumage and variety of tints as far surpass those of any other country. The prevailing hues of the plumage of the greater number of the American species are the different shades of blue, from the most delicate ultramarine or azure to deep indigo, generally variegated, in a very agreeable manner, with white, black or yellow. Amongst the most handsome of these birds we may mention the great crested Jay of South America and the West Indies, *Cyanocorax pileatus*, a large and very showy species, the Mexican painted Jay, *Cyanocitta*

ornata, which has the entire plumage of a deep blue color beautifully relieved by a large patch of very pale bluish white on the back part of the head and neck. Others, such as Beechey's Jay of California and Mexico, *Cyanocitta Beechii*, of which we shall give a plate and description, have the plumage of fine silky blue above, and deep black on the under part of the body. There are a few species in which the prevailing color of the plumage is violet, as the *Cyanocorax violaceus*, a native of the northern parts of South America, and probably of Central America and Mexico. There are also a few species of which the bird figured in our present plate is one, in which the plumage is green, usually variegated with blue and yellow.

The Mexican species yet discovered are of very fine plumage, though generally of smaller size than many of those of South America. Several of the species of the southern portion of this continent are, in fact, so large that they approach the stature of their relatives, the crows, though clothed in a quite different style of vesture. In fact, some of the larger species are known to collectors and travellers by such names as the Blue crow, the Surinam crow, &c. The *Cyanocorax azureus* of South America is the "Blue Crow," and is one of the largest species of this family.

The Jays must be regarded as highly organized birds, and are possessed of a superior order of instincts. However deficient in melody or compass of voice, there are few other birds in which are found combined so many characters or bird-like qualities. Delicacy of form, beauty of plumage, vigorous and enduring powers of flight, are united with much liveliness of disposition, unusual instincts of precaution and self-preservation, and the ability to subsist on very diversified descriptions of both animal and vegetable food. They are accordingly entitled to a superior position in any system of classification, based, as all zoological systems should be, on the knowledge of functional as well as of organic characters;—on the observations of the naturalist in the field or forest, not less than on the conclusions or discoveries of the anatomist.

Nearly all the species of this group of birds appear to partake to a considerable extent of the cunning, though not unpleasant nor unsocial habits of the Blue Jay of the United States, and like it they feed indiscriminately on seeds or fruits, worms, insects, and even small quadrupeds, or on other birds. They live principally in the forests, though several of the fine species of South America and all the species of North America frequently resort to the orchards and fields, or

approach the habitations of men, and when captured young are readily domesticated.

The very handsome bird which, in our first plate, we present to our readers, is a recent addition to the Ornithology of the United States, having been observed in Texas, though previously known as a bird of Mexico. It is nearly related to the Peruvian Jay, *C. yucas*, Boddaert, or *C. peruvianus*, Gmelin, which is a native of the countries of western South America. It is, however, considerably smaller, and is differently colored on the inferior parts of the body, having there a prevailing tint of green instead of the clear yellow of that also handsome bird, and other characters tending to establish a clear specific difference.

This bird is abundant in Mexico. It was observed to be quite numerous on the *tierra templada* or table lands, and in the hills bounding the plains of Perote and Puebla on the east, by Mr. William S. Pease, an enterprising naturalist, who accompanied the army of the United States, under General Scott, throughout its campaign in Mexico. Mr. Pease learned that it lived on the sides of the hills throughout the year, and was called by the inhabitants, the *pepe verde*. His collection, now included in that of the Academy of Natural Sciences of Philadelphia, contained very fine specimens of both sexes, though his notes contain little information respecting them.

M. Lesson, an eminent French naturalist, was the first to describe this species. His description, from a Mexican specimen, is in the *Révue Zoologique* for 1839, p. 100. (Paris.) The first published notice of it as a Texan species is by Mr. Geo. N. Lawrence, in the *Annals of the New York Lyceum of Natural History*, vol. v., p. 115.

The credit of having first discovered it within the limits of the United States is due to Col. GEORGE A. M'CALL, Inspector General of the United States Army, who sent specimens to the Philadelphia Academy, from Texas, several years since, and who has most kindly favored us with the following note:

"The first specimens of this Jay that I saw within the territory of the United States, were in the forests that border the Rio Grande, on the south-western frontier of Texas. There they were mated in the month of May, and no doubt had their nests in the extensive and almost impenetrable thickets of *Mimosæ*, which are commonly denominated *Chaparral*. Of the number of their eggs, or the description of their

nests, I learned nothing, not having been able to discover their abode, precisely; but from the jealousy and pugnacity which they manifested on the approach or appearance of the large boat-tailed blackbird of that country (*Quiscalus macrourus*,) which was nesting in great numbers in the vicinity, I felt satisfied that the Jays were, at the time, also engaged in the duties of incubation and rearing their young. In character or temperament they appeared to be very active and lively, though less noisy than some other species of their family, and their gay plumage was exhibited to advantage as they flitted from tree to tree, or dashed boldly in pursuit of such of their more plainly attired neighbors as ventured to intrude upon their domain."

Captain J. P. M'Cown, another accomplished officer of the United States Army, also observed this bird in Texas, to the natural history of which country he has contributed a large amount of most valuable information. From the interesting memoranda which he has very generously and promptly furnished for our use in the present work, we make the following extract:

"During the several years that I was in Texas, I frequently saw this Jay, but never above Ringgold Barracks or north of the woods which skirt the Rio Grande. It appeared to prefer the Acacia groves which have sprung up where the ground has been overflowed. Though I have shot numerous specimens it is rather a cautious bird. I have seen nests high up in the trees alluded to, and always supposed them to belong to this species, but was never clearly satisfied, though I have no doubt that it breeds in Texas."

The figure in our plate is about three-fourths of the natural size.

The plant represented is the *Salvia coccinea*, which is a native of the southern parts of North America.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CYANOCORAX, Boie, in Oken's Isis, 1826, part II., p. 977.

Bill rather large and strong, with the ridge of the upper mandible curved gradually from the base to the point—ridge of the lower mandible curved upwards. Nostrils at the base of the bill, in rather a large membrane, and partially concealed by projecting feathers. Wings moderate, rather rounded, fourth, fifth and sixth primaries usually longest; secondaries long,

exceeding some of the shorter primaries. Tail rather lengthened and rounded; tarsi robust, rather long; toes and claws strong. Head usually with a crest or with the frontal plumes erect and crest-like. Plumage of various colors, mostly with some part of greater or less extent, blue. Exclusively American. Type *C. pileatus*. (Wagler.)

CYANOCORAX LUXUOSUS. (Lesson.)

GARRULUS LUXUOSUS. Lesson Revue Zoologique 1839, p. 100. (Paris.)

CYANOCORAX LUXUOSUS. (Less.) Du Bus, Esquisses Ornithologiques, part IV. pl. 18 (Brussels.)

FORM. Feathers of the head in front or at the base of the upper mandible, short, erect and rigid—other plumage of the head above somewhat elongated; wings rather short, with the fourth and fifth quills slightly longest; tail ample, and rather long, with the central feathers longest; bill strong, tarsi and feet moderate, claws strong and curved.

DIMENSIONS.—Total length (of skin) from the tip of the bill to the end of the tail, about $10\frac{1}{2}$ inches, wing $4\frac{3}{4}$, tail $5\frac{1}{2}$ inches.

COLORS.—Short feathers at the base of the bill, blue, which color is succeeded by a transverse band of bluish white; cheeks and head above, pale azure blue; sides of the head in front of and behind the eyes, throat and neck in front fine silky black, which forms a wide mask extending to the breast.

Body above, wings and central tail feathers, fine parrot-like green, deepest on the tail, entire inferior surface of the body pale yellowish green. External tail feathers, pale yellow. Bill and feet dark colored. The green feathers of the tail running into blue at their ends, and nearly black on their under surface.

Sexes similar.

HABITAT. Mexico and Texas.—Specimens in the Museum of the Academy of Natural Sciences, Philadelphia.

OBSERVATIONS. The present species we regard as deviating in some degree from the characters of the typical species of this genus, as is the case with other species to which it is nearly related. We do not at present, however, consider them as presenting peculiar characters sufficient to constitute a distinct genus, though that excellent ornithologist, the Prince of Canino, has given to this group the generic name of *Xanthoura*, which embraces the species now before us, *C. yucas* (Boddaert) and *X. quati-malensis*. Bonap. (Consp. Av. p. 380.)



Drawn on stone by W. L. Hinchcock

Geo. S. Ante, d. 4

The Californian Woodpecker

Printed & Col'd by J. T. Bowen Phaidr

Melanerpes formicivorus (Swainson)

MELANERPES FORMICIVORUS.—(SWAINSON.)

THE CALIFORNIAN WOODPECKER.

PLATE II.—MALE AND FEMALE.

THE most richly colored Woodpeckers of North America, at least in our opinion, are two of the most abundant species. We allude to the bird now before us, and to the well-known red-headed Woodpecker, *Melanerpes erythrocephalus*, (Linn.) in both of which the prevailing colors are a fine glossy black and a rich crimson.

Were the latter bird less common in the Atlantic States, his claims to be considered one of our finest plumaged species would perhaps be more distinctly recognised, and his very showy head of the finest crimson could not fail to attract admirers. As, however, he has the disadvantage of an attributed disposition to take liberties entirely forbidden by the farmer and gardener, and is moreover to be seen in almost every woodland in the summer season, his gay appearance is by no means duly appreciated, nor his general character held in high estimation. He is however not so abundant as formerly, and with the destruction of the large trees of the forest, which is constantly carried on to make room for the increasing population in the more densely settled States, the time may arrive when the sight of the red-headed woodpecker, with his brilliant plumage, will be an unusual and pleasing circumstance to the young, and serve to remind the aged of perhaps long-forgotten incidents and associations of early life when remnants of the forest yet flourished even in proximity to cities, or varied the aspect of cultivated districts.

Our present species is one of the most abundant of the birds of California. It appears to take the place of the red-headed woodpecker in the countries west of the Rocky Mountains, extending its range from Oregon into Mexico, and probably to Guatemala and other countries of Central America. It is not inferior to that species in the beauty of its colors, is quite as unwary and familiar in its disposition, and when the

population of the great Western States shall have arrived at such a very desirable stage of progress as to possess a generation of juvenile sportsmen, our bird will no doubt be quite as great a favorite on holiday shooting excursions.

Several species of woodpeckers have had ascribed to them the habit of accumulating stores of provisions in anticipation of the approach of winter, but we have no knowledge of this being done by any American species, except that now before us. For it we can claim this degree of instinctive prudence on undoubted evidence, and shall have the pleasure, in the present article, of laying before our readers an account of it, which is not only a remarkable illustration of instinct, but shows a singular method of mechanical preparation and management.

Our valued friends, Mr. John G. Bell of New York, and Dr. A. L. Heermann of Philadelphia, both of whom have made extended visits to California for the purpose of investigating its Natural History, found this woodpecker very abundant in all the parts of that country which either of them visited.

The former gentleman has had the kindness to inform us, that he considers it by far the most extensively diffused and common woodpecker of that country. He represents it as somewhat disposed to gregariousness in its habits, and has frequently seen individuals on the same tree so numerous and so close together, that several might have been killed at a single discharge. According to Mr. Bell, its note very considerably resembles that of the red-headed woodpecker, which it much resembles also in flight and other general characters. He observed it only on trees, particularly on the pines; and upon examination found the contents of the stomachs of all the specimens which were procured by him, to be composed principally of ants, of which several of the species of California habitually frequent trees. The large collection of birds brought home by Mr. Bell contained numerous specimens of this species.

The account given by Dr. Heermann of this bird is of a highly interesting character, and he has identified, for the first time, the species of woodpecker of which previously nothing could be accurately made out from the statements of travellers respecting a bird which possessed the provident and curious instinct of storing away a supply of food for the winter in holes made for that purpose in the bark of trees. His remarks are in his "Notes on the Birds of California observed during a residence of three

years in that country," published in the *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. II. p. 270. (Quarto 1853,) from which we transcribe the following :

"This is the noisiest and most abundant of the woodpeckers of California. Perched on the topmost branch of a tree, it darts suddenly into the air in pursuit of an insect, and having secured its object, soon again returns to the same place, only to repeat this manœuvre in a few moments.

"In the fall season this species is busily engaged in digging small holes in the bark of the pines and oaks, to receive acorns, one of which is placed in each hole, and is so tightly fitted or driven in, that it is with difficulty extracted. Thus the bark of a large pine, forty or fifty feet high, will present the appearance of being closely studded with brass nails, the heads only being visible. These acorns are thus stored in large quantities, and serve not only the woodpecker during the winter season, but are trespassed on by the jays, mice and squirrels.

"The nest of this bird is dug out in the body of a tree, and is from six inches to two feet in depth. The eggs, four or five in number, are pure white."

The following graphic and intelligent account, to the same purpose, is from Kelly's *Excursion to California*, and is evidently from the pen of an excellent observer and an agreeable writer :

"In stripping off the bark of this tree, I observed it to be perforated with holes, larger than those which a musket ball would make, shaped with the most accurate precision as if bored under the guidance of a rule and compass, and many of them filled most neatly with acorns. Earlier in the season I had remarked such holes in most of all the softer timber, but imagining that they were caused by wood insects, I did not stop to examine or inquire, but now finding them studded with acorns, firmly fixed in, which I knew could not have been driven there by the wind, I sought for an explanation, which was practically given me by Captain S——'s pointing out a flock of woodpeckers, busily and noisily employed in the provident task of securing the winter's provision. For it appears that this sagacious bird is not all the time thriftlessly engaged in "tapping the hollow beach tree" for the mere idle purpose of empty sound, but spends its summer season in picking these holes, in which it lays its store of food for the winter, where the elements can neither affect nor place it beyond their reach, and it is regarded as a sure omen that the snowy period is

approaching when these birds commence stowing away their acorns, which otherwise might be covered by its fall. I frequently have paused from my chopping, to watch them in the neighborhood, with the acorns in their bills, half clawing, half flying around the tree, and have admired the adroitness with which they tried it at different holes until they found one of its exact calibre; when, inserting the pointed end, they tapped it home most artistically with the beak, and flew down for another

"But the natural instinct of this bird is even more remarkable in the choice of the nuts, which are invariably found to be sound, whereas it is an utter impossibility in selecting them for roasting, to pick up a batch that will not have a large portion of them unfit for use, the most smooth and polished frequently containing a large grub generated within. Even the wily Digger Indian, with all his craft and experience, is unable to arrive at any thing like an unerring selection, while in a large bag full, that we took from the bark of our log, there was not one containing the slightest germ of decay. These woodpeckers never encroach on their packed stores until all the nuts on the surface of the ground are covered with snow, when they resort to those in the bark, and peck them of their contents without removing the shell from the hole. The bark of the pine tree, from its great thickness, and the ease of boring, is mostly sought for by these birds as their granary for the winter season."

This extraordinary example of instinct is scarcely surpassed by any other which has been observed in the animal kingdom, and it is to be hoped that further accounts will be furnished by observers in the countries which it inhabits, respecting the bird which is endowed with such interesting and unusual habits.

This woodpecker is common in Mexico in woods on the table lands, and was observed by Mr. Pease also in the upper part of the *tierra caliente*. It was first introduced to notice from Mexican specimens received from the vicinity of Real del Monte by Mr. Swainson, a distinguished English naturalist, who first described it in the *Philosophical Magazine*, 1827, p. 439 (London.) It was observed in California previous to that country having become a part of the United States, by Mr. Nuttall, the eminent botanist and zoologist, who gave it a place in his *Manual of the Ornithology of the United States and of Canada*. Vol. I., p. 682 (Boston, 1840.)

Our figures are rather less than one-third of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS MELANERPES. Swainson, in *Fauna Boreali Americana*, Birds, p. 316, and Lardner's *Cabinet Cyclopaedia*, Birds, Vol. II. p. 310. London, 1837.

Bill straight, rather wide at the base and somewhat cylindrical, ridge of the upper mandible arched, and with a slightly developed lateral ridge on each side, nostrils basal, nearly concealed by projecting plumes. Wings long, first primary spurious, fourth and fifth usually longest, tail moderate, composed of broad and strong feathers. Tarsi and feet moderate or rather strong; two external toes before and behind, nearly equal. General form short and robust; color black, varied with red and white. Type *M. erythrocephalus*. (Linn.)

MELANERPES FORMICIVORUS. (Swainson.)

PICUS FORMICIVORUS. Swainson in *Taylor's Phil. Mag.*, 1827, (p. 439,) London. *

PICUS MELANOPOGON. Temminck, *Pl. col.* Vol. IV., pl. 451. Leyden, about 1829.

MELAMPICOS FLAVIGULA. Malherbe in *Rev. et Mag. de Zool.*, 1849, p. 542? (Paris.)

FORM. Compact and rather robust; wing long, with the second and third quills longest, and nearly equal; tail rather broad, and with the feathers but moderately rigid at their ends, unless worn; feet moderately robust; toes long; claws much curved. Rather larger than *Melanerpes erythrocephalus*. (Linn.)

DIMENSIONS. (Of a skin from California.) Total length from tip of bill to end of tail, about $9\frac{1}{2}$ inches; wing, $5\frac{3}{4}$; tail, $3\frac{1}{2}$ inches.

COLORS. MALE. Short feathers immediately around the base of the bill, black. Broad subfrontal band, pure white, which unites with a wide, somewhat crescent-shaped mark of the same color, tinged with pale yellow on the throat and neck in front. Large coronal and occipital space immediately succeeding the white subfrontal band, fine light crimson, of which color there is also a small, irregular spot or two in the centre of a black band on the upper part of the breast.

Cheeks, back, wings, and tail fine deep black, with a greenish gloss. Band of black across the breast, succeeded by another, in which the feathers

are longitudinally marked with black and white; feathers of the flanks, and under tail coverts, white, with black longitudinal stripes; middle of the abdomen, rump, and spot at the base of the primaries, pure white. The latter most readily observed on the inferior surface of the wing. Secondary quills rather widely bordered with white on their internal edges. Bill nearly black; legs and feet lighter. Female similar to the male, but with a wide band of black on the top of the head.

HAB. California and Mexico. Spec. in Mus. Acad. Philada.

OBSERVATIONS. The bird described by Temminck as *Picus melanopogon* is stated by him to have been received from Mexico, and his figure is certainly the bird which is the subject of our present article. His description and figure are in Livraison 76 of the Planches Coloriees, which was published about 1828 or 1829, but bears no date, and was anticipated by Swainson's publication in the Philos. Magazine.

In the Revue et Magazin de Zoologie, for 1849, p. 542, M. Alfred Malherbe, who has devoted much attention to the study of the woodpeckers, has named a species *Melampicos flavigula*, and has very carefully pointed out differences which he considers sufficient to establish it as distinct from *Picus melanopogon*. He relies almost entirely on the greater or lesser extent and relative widths of the white, black and red spaces on their heads. Notwithstanding the extensive knowledge which M. Malherbe undoubtedly possesses from his great attention to this family of birds, I cannot see that there are any characters given which may not be very properly attributed to differences in age or sex, and I have accordingly felt myself justified in suspecting it to be the same as the present species, having before me specimens which I understand to represent both of them.

No dependence can be placed in the extent of the red color on the head, as a character, so far as I have observed, in the woodpeckers of the United States. In *Picus pubescens*, a common species in Pennsylvania, the young male has the head above entirely crimson, which color in the adult is restricted to a narrow occipital band. I do not know that the change in others of our species is so decided, but the width of the occipital stripe is much varied in different specimens of the same species, and my impression is, that as a specific character this very ornamental portion of the plumage of woodpeckers ought to be estimated with great caution.



Drawn on stone by W^m E. Hitchcock

The Black-crested Chickadee

Gen. G. White del

Lophophanes atricristatus (Cassin)

Lith. Printed & Col'd by J. T. Bowen, Philad.

LOPHOPHANES ATRICRISTATUS.—(CASSIN.)

THE BLACK-CRESTED CHICKADEE.

PLATE III.—MALE AND FEMALE.

THE pleasant little birds of the same family as those known in Great Britain as Tits or Tit-mice, have received in America, from the characteristic notes of several of the species, the name of Chickadees. Popular names being entirely of a local character and of little scientific value, we invariably prefer to give those by which species are known in this country instead of the names of birds allied to or resembling them which inhabit Europe, though the latter are generally adopted by American writers.

The species of this family, which are permanent residents in the middle and northern States, and especially the tufted or crested Chickadee (*L. bicolor*,) are among the very first of the feathered inhabitants of our woodlands to welcome the advent of spring, and to hail with their clear and melodious notes the earliest tokens of the decline of winter. Even on fine days in February or early in March, the crested chickadee may often be heard, apparently indulging himself in gratifying anticipations of the approaching spring-time; or it may be, that not being instinctively weather-wise like the beaver, and not at all versed in wise saws or modern instances, he thinks that it has already come. Which conclusion, though sometimes adopted quite as summarily by tidy house-keepers, is very apt to be demonstrated by the storms of St. Patrick's day to be entirely illusory.

The tits or chickadees are abundant birds in the temperate and northern regions of both hemispheres, most so perhaps in Europe, though the researches of ornithologists have added numerous species to those formerly known to inhabit Asia and America. Several very handsome birds of this family have been discovered, within a few years, inhabiting the Himalaya mountains, and other parts of India, and in Japan. In North America the species have increased from two only, which were figured by the celebrated Wilson, to twelve, the additions having been principally from the Western

States, and from Texas and Mexico, and there can be no doubt that in the almost unexplored countries of North-Western America as well as in those which have received a greater degree of the attention of zoological travellers, such as Texas, California and Mexico, others yet remain to be discovered.

There are about fourteen European species of this group of birds, and about twenty which are exclusively Asiatic. A few species of allied genera inhabit Africa and New Zealand, but none of near relationship have yet been found in Australia nor in South America.

The species of all countries appear to be very similar in their habits, and live almost entirely in the forests, subsisting exclusively on insects in the summer, and in the winter partially substituting seeds and berries for their more grateful food.

The black-crested chickadee is a native of Texas and probably also of Mexico. It was discovered in the former country by Mr. John Woodhouse Audubon, a son of the distinguished ornithologist, and was first described by us in the Proceedings of the Academy of Natural Sciences of Philadelphia. It is very similar to the crested chickadee in form and general appearance, but exhibits a striking difference in having the crest entirely black, by which character it is distinguished from all others of the genus to which it belongs.

The only information that we have obtained relative to its history has been communicated to us by Samuel W. Woodhouse, M. D., who was attached, as surgeon and naturalist, to a party under the command of Captain Sitgreaves of the Topographical Engineers of the Army of the United States, which surveyed the rivers Zunia and the Colorado of the west, by order of the Government.

Dr. Woodhouse has had the kindness to allow us to copy the following memoranda from his Journal, which will be published at an early period, with the Report made by Captain Sitgreaves to the Topographical Department, and will be an important contribution to the natural history of Texas and New Mexico:

“While our party was encamped on the Rio Salado in Texas, near San Antonio, in March, 1851, I observed this handsome little chickadee for the first time. It was busily engaged in capturing insects among the trees on the bank of the stream, and like the other species of its family, was incessantly in motion and very noisy. At our camp at Quihi, on the eighth of May, I

again found it very abundant among the oaks. The young males, which were then fully grown, much resembled the adult females, both wanting the black crest which characterizes the male. Afterwards I noticed this species, occurring sparingly, along our route, as far as the head waters of the San Francisco river in New Mexico.

"I observed it almost entirely in trees bordering streams of water, the females and young males invariably having the crest of the same cinereous color as their general plumage, but in the latter slightly tinged with brown. It occurred in small parties, appeared to be very sociable and lively in its habits, and in general appearance and in nearly all its notes which I heard, it so very much resembled the common crested chickadee of the Northern States as scarcely to be recognized as a distinct species at a short distance."

The collection made by Dr. Woodhouse contains fine specimens of this bird, from a male and female of which, and from Mr. Audubon's specimens, our plate has been prepared. We have represented both sexes about three-fourths of the natural size.

The plant figured is the *Phlox Drummondii*, a beautiful species which is a native of New Mexico and California.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS LOPHOPHANES. Kaup Skiz. Entw. Eur. Thierw. (1829.)

LOPHOPHANES ATRICRISTATUS. (Cassin.)

PARUS ATRICRISTATUS. Cassin. Proc. Acad. Philada. Vol. V., p. 103, (Oct. 1850.)

FORM. With a high pointed crest, bill rather strong and acute. Wings long, with the fourth and fifth primaries longest, and nearly equal; tail rather long.

Dimensions of a skin from Quihi, Texas. Total length, from tip of bill to end of tail, about 6 inches; wing 3; tail $2\frac{3}{4}$ inches.

COLORS. MALE. Crest, black; body, wings and tail above, cinereous; darker on the latter, and with an olivaceous tinge on the back. Front and inferior surface of the body, ashy white; flanks, ferruginous. Shafts of primaries, reddish at their bases; those of the tail feathers white beneath; bill and legs black. Young male with the crest cinereous, shaded with light brown.

FEMALE. Similar to the male, but slightly smaller, and with the crest cinereous.

HAB. Texas. Spec. in Mus. Acad. Philada.

OBS. This species is of the same general form and color as *Lophophanes bicolor*, (Linn.,) and *Lophophanes inornatus*. (Gambel.) It is about the size of the former, and larger than the latter, and may be readily distinguished from either of those or from any other species known to me, by its black crest.

Having access to specimens of all the known North American species of this family, in the collection of the Academy of Natural Sciences of Philadelphia, we beg the liberty of laying before our readers a synopsis of these birds, with short descriptions, and of availing ourselves also of the present occasion to express our grateful acknowledgments for the facilities and privileges generously allowed us by the gentlemen of the Academy.

SYNOPSIS OF THE NORTH AMERICAN SPECIES OF THE SUB-FAMILY PARINÆ.

I. GENUS PARUS. LINNÆUS. Syst. Nat. 1. p. 340. (1766.)

NOT CRESTED, bill short, rather strong, conic, entire, nostrils at the base of the bill and concealed by projecting feathers. Wings moderate, with the first quill spurious, fourth and fifth usually longest and nearly equal, tail rather long, legs and feet rather robust, claws curved and sharp. Colors usually cinereous and black.

This genus originally included all the birds now usually regarded as constituting a family of many genera, species of which inhabit nearly all the countries of the world. As restricted, it appears properly to embrace numerous species without crests found in Asia, Europe, and America; nearly all of which have the upper part of the head and throat black. A further division has however been made by Professor Kaup, of Darmstadt; and all the American, with some European and Asiatic non-crested species, form his genus *Pacula*.

The American species are as follows:

1. PARUS ATRICAPILLUS. Linn. Syst. Nat. I. p. 341 (1766). The black-capped Chickadee.

Length (of skin) about 5 inches. Head and neck above and large space on the throat black, cheeks and sides of the neck white, entire plumage of the body above cinereous, slightly tinged with brownish olive, below ashy white tinged with brownish. Bill and feet dark. Sexes alike.

HAB. Northern and Middle States of North America. Spec. in Mus. Acad. Philada.

2. PARUS CAROLINENSIS. Audubon Orn. Biog. II. p. 341, (1834.) The Carolina Chickadee.

Length (of skin) about $4\frac{1}{2}$ inches. Head and neck above and large space on the throat black, cheeks and sides of the neck white. Entire plumage of the body above cinereous, slightly tinged with brownish olive, below ashy white tinged with brownish. Bill and feet dark. Sexes alike.

HAB. Middle and Southern States of North America. Spec. in Mus. Acad. Philada.

OBS. Very similar to the preceding, but easily recognized by its smaller size.

3. PARUS SEPTENTRIONALIS. Harris, Proc. Acad. Philada. II. p. 300, (Dec. 1845.) The long-tailed chickadee.

Length (of skin) about 6 inches. Head above and space on the throat black, cheeks and sides of the neck white. Entire plumage of the body above cinereous, strongly tinged with reddish brown, below ashy white, tinged with yellowish brown, especially on the sides and flanks, external web of outer tail feathers nearly pure white. Bill and feet dark. Tail comparatively longer than in either of the preceding species.

HAB. Missouri and the Rocky Mountains. Great Salt Lake. Spec. in Mus. Acad. Philada. and in the National Collection, Washington city.

Obs. A species related to, but quite distinct from either of the preceding. It is larger, and the specimens which I have seen have the bill longer and more pointed, the tail much longer, the black space on the head more restricted, and the general coloring more tinged with brown. The white outer edges of the external tail feathers is a well-marked character.

4. *PARUS MONTANUS*. Gambel, Proc. Acad. Philada. I. p. 259, (April, 1843.)

Length (of skin) about 5 inches. Head and neck above, line through the eye, space on the throat and upper part of the breast black. Line over the eye, large space on the cheeks and side of the neck white. Body above cinereous, below ashy white tinged with brownish on the flanks, bill and legs dark.

HAB. California. Spec. in Mus. Acad. Philada.

Obs. This western species is readily distinguished from all others of North America by the broad white line over the eye. Its bill is longer than in the typical species.

5. *PARUS HUDSONICUS*. Forster, Philosoph. Trans. lxii. p. 430, (London, 1772.)

Length (of skin) about 5 inches. Head and neck above deep ferruginous brown, large space on the throat brownish black, cheeks white. Body above brownish cinereous, below ashy white, sides and flanks deep reddish chestnut brown, bill and feet lead colored. Sexes very similar.

HAB. British America, and Northern States of the Union. Spec. in Mus. Acad. Philada.

Obs. Quite a distinct and well-marked species, erroneously supposed by some European writers to be the young of *P. atricapillus*. It has been found breeding in the State of Maine, by our friend Dr. Brewer of Boston.

6. *PARUS RUFESCENS*. Townsend Jour. Acad. Philada. vii. p. 190, (1837.)

Length (of skin) about 4½ inches. Head and neck above, large space on the throat and breast deep blackish brown, cheeks and sides of the neck white, body above and sides below bright chestnut, medial portion of the body below ashy white. Bill and legs lead color.

HAB. Oregon and California. Spec. Mus. Acad. Philada.

Obs. A beautiful little* species, which appears to inhabit a large extent of country west of the Rocky Mountains. It is easily recognized by the bright chestnut color of the superior parts of the body.

II. GENUS LOPHOPHANES. KAUP. Skiz. Entw. Eur. Thierw. (1829.)

CRESTED, Bill moderate, strong, conic, entire, upper mandible rather the longer and slightly curved, nostrils basal, rounded and concealed by projecting feathers. Wings rather long, with the fourth and fifth primaries usually longest, tail rather long, legs and feet robust, the latter rather large, and provided with curved, strong and very sharp claws. Prevailing color of all known American species, cinereous.

This genus comprises the crested species of Europe and America, which were formerly included in the genus *Parus*, Linn., but which evidently form a natural and easily characterized group, fully entitled to generic distinction.

1. *LOPHOPHANES BICOLOR*. (Linn.) The crested Chickadee.

PARUS BICOLOR. Linn. Syst. Nat. I. p. 340, (1766.)

Length about $6\frac{1}{2}$ inches. Front black, crest and body above dark cinereous, tinged with greenish on the back, below ashy white, flanks reddish brown. Bill and legs nearly black. Sexes alike.

HAB. Eastern North America. Spec. in Mus. Acad. Philada.

2. *LOPHOPHANES ATRICRISTATUS*. (Cassin). The black-crested Chickadee.

PARUS ATRICRISTATUS. Cassin, Proc. Acad. Philada. V. p. 103, (Oct. 1850.)

Length (of skin) about 6 inches. Male—front, ashy white, crest black, entire plumage above cinereous, beneath ashy white, flanks reddish brown. Bill and legs black. Female, with the crest ashy, not black. Young, like the female, but with crest tinged with brown.

HAB. Texas and Mexico. Spec. in Mus. Acad. Philad. and in the National Collection Washington city.

3. *LOPHOPHANES INORNATUS*. (Gambel). The plain-crested Chickadee.

PARUS INORNATUS. Gambel. Proc. Acad. Philada. II. p. 265, (Aug. 1845.)

Length about $5\frac{1}{2}$ inches. Front, crest and entire plumage above cinereous, strongly inclining to olive, below uniform whitish, cinereous. Bill and legs lead-colored. Sexes alike.

HAB. California. Spec. in Mus. Acad. Philada.

Obs. A plainly-colored species abundant in California, easily recognized by the uniform cinereous color of its plumage.

4. *LOPHOPHANES WOLLWEBERI*. Bonaparte, Comptes rendus, Acad. Paris, xxxi. p. 478. (Sept. 1850.) The Texan Chickadee.

PARUS ANNEXUS. Cassin, Proc. Acad. Philada. V. p. 103. (Oct. 1850.)

LOPHOPHANES GALEATUS. Cabanis Cat. Heine's coll. p. 90. (1851.)

Length (of skin) about 5 inches. Anterior feathers of crest, cinereous, succeeding and most elongated, black, others margined with white, short occipital feathers black. Throat black, line commencing behind the eye, thence curving and uniting with the space of the same color on the throat, black. Line above the eye running into the crest and around on the neck, white. Entire plumage above cinereous, tinged with olive, below ashy white, bill and feet dark.

HAB. Texas. Spec. in Mus. Acad. Philada.

Obs. This species considerably resembles *Lophophanes cristatus*, (Linn.) a common European bird. I have no doubt that the names given above are synonymous; that applied by us being about one month later than the publication of the description by Bonaparte as cited.

III. GENUS PSALTRIA. TEMMINCK. Pl. Col. III.

BILL very short, thick, upper mandible curved, entire, nearly of the same thickness as the lower, nostrils basal, concealed by projecting feathers, wings rather short, first quill spurious, fourth and fifth longest and nearly equal, tail long and slightly wedge-shaped. Tarsi long and slender, feet rather strong, claws curved and acute, that on the posterior toe strongest. Not crested, colors of all known species principally cinereous and white.

This genus was established by the celebrated naturalist Temminck, of Leyden, (in *Planches Coloriées*, vol. iii.) with a little bird as its type named by him *Psaltria exilis*, which inhabits

JAVA. The bird discovered by Dr. Townsend in Oregon, and now well known to American Ornithologists as *Parus minimus*, Townsend, not only belongs to this genus, but only materially differs in size from *Psaltria exilis*. Temm. Its colors and general appearance much resemble it.

The American species are:

1. *PSALTRIA MINIMA*. (Townsend.) Townsend's Chickadee.

PARUS MINIMUS. Townsend, Jour. Acad. Philada. vii. p. 199. (1837.)

Length (of skin) about 4 inches. Head above deep cinereous, inclining to purplish brown, body above cinereous, with a tinge of olive. Throat and breast whitish, abdomen and flanks cinereous, tinged with purplish brown, bill and feet black. Female rather smaller.

HAB. Oregon and California. Spec. in Mus. Acad. Philada.

Obs. As frequently turns out to be the case with birds to which such names as *minor* and *minimus* are applied, this little bird is considerably *larger* than its near relative, *P. exilis*, Temm. which otherwise it much resembles. It is now frequently brought in collections from California.

2. *PSALTRIA MELANOTIS*. (Sanbach.) The black-eared Chickadee.

PARUS MELANOTIS. Sandb. Proc. Brit. Ass. for Adv. Sci. vi. p. 99. (1837.)

"*PARUS MELANOTIS*." Hartlaub, Rev. Zool. 1844, p. 216.

PSALTRIPARUS PERSONATUS. Bonaparte, Comptes Rendus Acad. Paris, xxxi. p. 478. (Sept. 1850.)

Length (of skin) about 4 inches. Male, broad stripes on each side of the head under the eye, and uniting on the occiput, deep black with a green metallic lustre. Head above pale cinereous, body above cinereous brown, throat and neck white, below ashy white, with a purplish tinge, bill and legs dark. Female, with the ears brown.

HAB. Texas and Mexico. Spec. in Mus. Acad. Philada.

Obs. This pretty little bird has the bill longer and more compressed than either the preceding species, or *Psaltria exilis*, Temm. It is, however, we think, a true *Psaltria*, in which respect we coincide with Prof. Westerman, who gives a description and excellent figure of it in Contributions to Zoology, (Bijdragen tot de Dierkunden,) Amsterdam, 1851.

A few other names have been given to American species of the old genus *Parus* by the earlier authors, all of which are undoubtedly synonymes for those of species previously described, and which we have enumerated. We have in all cases given the authority for the first description and its date.

CHAMÆA FASCIATA. (Gambel) a bird of California—though described originally, but as Dr. Gambel expressly states provisionally only, as a *Parus*, we regard as properly belonging to the family of Wrens (Troglytidæ.)



Drawn on stone by W.E. Hitchcock.

The Massena Partridge | *Cyrtonyx Massena (Lisson)*

Geo G. White, del.

Lith. Printed & Col^d by J.T. Bowen India.⁴²

CYRTONYX MASSENA.—(LESSON.)

THE MASSENA PARTRIDGE.

PLATE IV.—MALE AND FEMALE.

THIS singularly, we had almost said, fantastically colored, though very handsome Partridge, is an inhabitant of Texas and Mexico. No other species presents such a remarkable arrangement of colors, and the black lines in the face of the male bird, as the eminent English Ornithologist, Mr. Gould, very appropriately observes, "forcibly remind one of the painted face of the clown in a pantomime."

It has, until recently, been an exceedingly rare and highly prized bird in collections, a few specimens only having reached Europe or the cities on the Atlantic seaboard of the United States. Those have received names, and have been described by various European authors, as will appear from the synonymes included in the present article; but neither of them have published any information relative to the habits or history of this curious bird, nor have indicated the district of Mexico from which it had been received. It has been known only as a museum species.

Since the commencement of the military operations of the United States in Texas, New Mexico and California, and the subsequent incorporation of those countries into this great Confederacy, their natural history has attracted a large share of the attention of naturalists and students at home, and also of many highly accomplished officers of the army. In fact, to the latter gentlemen is to be awarded the high merit of having contributed, notwithstanding the engrossing and deeply responsible character of their professional duties, a large portion of all that is known relative to the zoology of those vast, and especially in a scientific point of view, very interesting regions.

A valuable notice of the Massena Partridge is given by our highly esteemed friend, Col. McCall, in his "Remarks on the habits of birds met with in Western Texas, between San Antonio and the Rio Grande, and in New

Mexico, with descriptions of several species believed to have been hitherto undescribed," published in the Proceedings of the Philadelphia Academy, V. p. 213, (June, 1851,) which we have taken the liberty of transferring to our pages.

"This species was not seen before crossing the San Pedro, but it was not long until it made its appearance in the waste and rocky region into which we then entered. And from that time until we reached the Rio Pecos, a distance of 140 miles, (westwardly by the route travelled,) it was frequently seen, though I should not say it was very common. This region is a desert of great length from north to south, our trail crossing it at nearly right angles. The general face of the country is level, and consists of either a crumbling argillaceous limestone, or a coarse grey sand, producing nothing but a sparse growth of sand plants. Water is found only at long intervals, and except at those points there is little cover for game, and apparently less food,—the principal growth being *Cacti*, of which the most common is *Cactus arborescens*; yet here, amongst projecting rocks, or on the borders of dry gullies, or in loose scrub, I found the Massena Partridge in all the beauty of his rich and varied plumage.

"The habits of this species are different from those of any other species of partridge that I have met with. They were in covies of from eight to twelve individuals, and appeared to be extremely simple and affectionate in disposition. In feeding, they separated but little, keeping up a social *cluck* all the time. They were so gentle as to evince little or no alarm on the approach of man; scarcely moving out of his way as he passed, and only running off or flying a few yards, when perhaps half their numbers were laid low by a shot. This inclined me to think they might with little difficulty be domesticated, although I found them here in a boundless, barren waste, and nowhere near the habitation of man. This trait of gentleness is the very opposite of those strikingly manifested by the scaly partridge, (*Callipepla squamata*), which I always observed to be, though found perchance in grounds as little frequented as these, remarkably vigilant, shy, and difficult to approach. The call or signal note of this species is peculiar. I never saw it after crossing the Pecos river."

Col. McCall's observations on the habits of this bird confirm an opinion expressed by Mr. Gould in his Monograph of American Partridges: "No

account whatever has yet reached us of the habits and economy of this species, which, judging from the comparative shortness of the toes, and the great development of its claws, we may expect to be different from those of other members of the family."

The circular spots which are numerous on the inferior parts of the body in this partridge, appear to indicate as a character an analogy to the Guinea fowls, which is further sustained by its habit of uttering its note continually when in company with its fellows, or when feeding. The Guinea fowls in their native wilds also associate in small parties, and take wing only reluctantly, and for short distances.

Capt. S. G. French, of the U. S. Army, has most kindly and very opportunely presented us with fine specimens of this and other species preserved in spirits, for which, as well as for some valuable memoranda, we beg here to express our gratitude. He remarks, with reference to this species: "It was in the summer of 1846, when crossing the then pathless and untrodden plains or table lands which extend westwardly from San Antonio, Texas, to New Mexico, that I first met with this beautiful partridge. On a bright summer afternoon, I undertook the ascent of a high rocky mountain for the purpose of obtaining a view of the valley through which the San Pedro river takes its course, and when I had gained the summit I observed several of these birds, a few feet only in advance of me, running along over the fragments of rocks and through the dwarf bushes, which grew wherever there was sufficient soil. Their handsome plumage and their gentleness attracted my attention, and I felt many regrets that I had left my gun behind me, thereby losing the opportunity of securing specimens for examination.

"A few days afterwards, however, when encamped on the head waters of the river, I found a covey, and succeeded in obtaining several specimens, one of which I had skinned, but which was afterwards unfortunately lost. From that point we occasionally met with these birds on the route to the Pecos river, a distance of over one hundred miles. I did not see them again until we came to the Eagle Springs, in a mountainous region about twenty-five miles from the Rio Grande. Two covies were found there, and several specimens were obtained.

"In the spring of 1851, I again passed over the same route in charge of a military expedition, and on the way out, two of these birds only were seen, one of which, (a female,) was killed by Major E. Backus, U. S. Army,

and is now in the collection of Dr. Woodhouse, who was then going out with a party of topographical engineers to which he was attached. When returning in July last, I chanced to kill at an encamping ground near Howard's Springs, between the San Pedro and Pecos rivers, the specimen which I now send you. It was the only one that I saw on the route as I came back from New Mexico, and it is but fair to conjecture that these birds are not at all numerous.

"They appear to inhabit the rocky sides of the mountains and hills in that desolate region of elevated plains, west of the fertile portions of Texas, living amidst the solitude that wraps them in silence, far from enemies and the busy haunts of men. In no instance have I met with this species near any settlements. The wild, rocky hill-sides in the lone wilderness, seem to be their favorite resort; and there, where trees are almost unknown, and vegetation is scant, and where hardly a living thing is seen, are these fine birds found in all their beauty and gentleness. The covies of them showed but little alarm at our approach, and ran along over the rocks, occasionally attempting to secrete themselves beneath them, in which case they would let a person approach within a few feet. When startled by the firing of a gun, they fly but a few yards before again alighting, and exhibit little of that wildness peculiar to all the other species of partridges with which I am acquainted."

In 1832 this bird was described under the name *Tetrao guttata*, by Don Pablo de la Llave, in *Registro trimestre ó coleccion de Memorias de Historia, Literatura, Ciencias y Artes*, Vol. I. p. 145, Mexico, 1832, which periodical, though little known, and discontinued, we believe, before the completion of the second volume, contains several valuable papers by this and other Mexican authors, relative to the natural history of their country. The ornithological papers by Sr. De la Llave, evince much ability, and contain very accurate observations and descriptions; and a tone pervades them too, which proclaims him to be a true lover of nature. That in which we are interested at present, is entitled, "Sobre tres especies nuevas del genero *Tetrao*," and consists of notices of birds of this genus, of which he had living specimens at his residence in the city of Mexico, and descriptions of three species, viz.: *Tetrao marmorata* (which is *Ortyx macroura*, Jardine and Selby), *T. cristata*, (which is *O. squamata*, Vigors.) and *T. guttata*, (which is *O. Massena*, Lesson.)

To the last bird he thus alludes: "It is only a few days since the third

species has been brought to me. It is rather smaller than the former, and its deportment is entirely different. It carries its head habitually resting upon its shoulders, the neck being excessively *small* and deflexed, and in every thing it shows an amiability, and so to speak, a kindness of character (*una bondad de caracter*) which is not found in any other species of this genus, and it is naturally so tame and domestic as to permit itself to be caught with the hand. These birds are always united, forming a covey, and whenever one is separated, the others follow it; they do not, like others, wish to sleep on elevated places, but sit on the ground, drawing very near together. Their notes, which are not varied, are very low and soft, and I have never heard loud cries from the male. When they are frightened, they show much activity and swiftness; at other times their gait and movement are habitually slow and deliberate, carrying the crest puffed up (*esponjada*)."

Sr. De la Llave gives as the locality of his specimens, the warm regions near the city of Mexico.

These statements comprise all that is known at present of the Massena Partridge.

The contents of the crop in Capt. French's specimen consisted exclusively of fragments of insects, pronounced by Dr. Leconte to be principally grasshoppers, and a species of *Spectrum*. No trace whatever of food of a vegetable character.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CYRTONYX. Gould, Monograph of the Odontophorinæ (American Partridges) Introduction, p. 14, London, 1850. Folio.

Bill short, robust, ridge of the mandible curving downwards from its base; lower mandible straight with two slight dentitions near its point; nostrils large, covered and bordered with a membrane. Head crested, the feathers inclining backward and forming a thick tuft on the occiput; wings rather long, tertiaries pendant, longer than the primaries; tail short, and composed of soft feathers. Tarsi rather long and robust; toes short, hind-toe focal, nails large, long and curved. All the known species are natives of America. Type *C. Massena*.

CYRTONYX MASSENA. (Lesson.)

ORTYX MASSENA. Lesson. Centurie Zoologique, p. 189. Paris, 1830.

ORTYX MONTEZUMÆ. Vigors. Zoological Journal, Vol. V., p. 275. London, 1830.

ODONTOPHORUS MELEAGRIS. Wagler. Isis. Vol. XXV. p. 277. Leipzig, 1832.

"PERDIX PERSPICILLATA. Lichtenstein in Mus. Berlin." Gould in Monograph. *ut supra*.

TETRAO GUTTATA. Llave Reg. trimestre, I. p. 145. Mexico, 1832.

FORM. Compact and robust; plumage of the head above, elongated, and forming a pendant thick tuft on the occiput. Wings rather long; tail short, formed of weak feathers, and concealed by the superior coverts; tarsi rather short, robust; toes short; claws long, curved.

Dimensions of Capt. French's male specimen in spirits. Total length, from tip of bill to end of tail, about 9 inches; wing 5; tail 2 inches. Female. Dr. Woodhouse's female specimen, (dried skin.) Total length about $8\frac{1}{2}$ inches; wing, $4\frac{3}{4}$; tail, 2 inches.

COLORS. MALE. General color of the sides of the head and throat, white, with black stripes commencing at the base of the bill and curving above and below the eye, forming a broad, abruptly terminated somewhat triangular patch on the cheek, which is united to a wide longitudinal mark on the throat;—the entire white space enclosed by an edging of black.

Occipital tuft of crest-like feathers, buff yellow, frequently nearly white, but varying in shade of color in different specimens. Head above with a central black line commencing at the base of the bill, and running into brownish and black, on the upper part of the head.

Upper surface of the body brown, inclining to reddish chestnut, every feather having several transverse bars of black, and a narrow longitudinal stripe of pale yellowish, nearly white in the centre; wing coverts and tertiaries paler, and with the black bars much broader, and inclining to form circular spots on some of the feathers. Primaries brownish black, transversely barred with pale reddish yellow, especially on the outer webs.

Middle of the breast and abdomen fine deep chestnut, forming a wide longitudinal stripe on those parts of the body; sides and flanks sooty black, every feather marked with about six or eight circular spots of pure white; ventral region, thighs, and under tail coverts, deep black. Tail and long superior coverts same color as the wing coverts. Upper mandible nearly black; under mandible lighter; tarsi pale colored.

FEMALE. Head above, and occipital tuft and body above, pale reddish or purplish brown, with a tinge of cinereous; every feather with transverse irregular bars and lines of black, and with a conspicuous longitudinal narrow stripe of yellowish white in the centre.

Throat pale white; inferior surface of the body pale purplish brown on the belly and flanks, with irregular lines and minute spots of black.

HAB. Mexico and Texas. Spec. in Mus. Acad. Philada.

OBS. The descriptions by M. Lesson and Mr. Vigors, as cited above, were published nearly at the same time. That by M. Lesson appears to have had a short period of priority, which entitles his name to preference.

In our article on another species, we propose to give a synopsis, with descriptions of all the partridges inhabiting the continent of America.

LARUS HEERMANNI.—CASSIN.

THE WHITE-HEADED GULL.

PLATE V.—ADULT MALE AND YOUNG FEMALE.

AMONGST the many species of sea-birds which frequent the coast of the American continent on the Pacific ocean, there is a race of Gulls with very graceful forms, slender and brightly colored bills, and handsome plumage, of which no immediate representatives have yet been discovered on the eastern shores of this continent. The range of the species of this race extends from Oregon to Cape Horn, and one species similar in general characters inhabits the coasts of Australia and some of the islands in the Pacific ocean.

This group appears to be characterized generally by the uniform lead-colored plumage which prevails in several of the known species, and seems to embrace *Larus Belcheri*. Vigors. *Larus fuliginosus*. Gould. *Larus nova hollandiæ*. Stephens, the present species, and some others.

The bird, which is the subject of the present description, is one of the most handsome of the numerous family to which it belongs, and of which species are found on all the sea shores of the world. It is one of many additions to the ornithological fauna of the United States, which have been discovered by Adolphus L. Heermann, M. D., of Philadelphia, who has been occupied for nearly three years in making researches and collections, with excellent judgment and great enterprise, in California, and has now succeeded in safely bringing home the most extensive collections ever made in that country.

Dr. Heermann found this Gull occurring frequently on the coast of California, but most numerous in the harbor of San Diego in the month of March, at which time though it appeared to have attained its perfect plumage in some instances, yet many specimens were clothed in that of young birds. Both of these stages of plumage are represented in our plate, and it is possible that the plumage assumed in winter, at all ages, may be similar in most respects to that of the young.



Designed by W. E. Hitchcock

The White-headed Gull

Larus Heermannii / *Cassini*

Geo. L. White del.

Loth Printed & Col'd by J. Bowen Phild.

It was observed, at the localities alluded to, usually flying in company with the western Gull, *Larus occidentalis*, Audubon, a large and handsome species, of which, in a future part of our work, we hope to have the pleasure of presenting a figure and description to our readers. It appeared to be engaged in the capture of small fishes, of which several species abound in the harbor of San Diego, and also appeared to feed on the small maritime animals of various classes, that inhabit the immense beds of *Kelp* which occur on the coast, and are especially extensive off the harbor of San Diego less than a mile from its mouth.* The nests and eggs of both the present species and of the western Gull were found by Dr. Heermann on the Coronadoes islands which are situated a short distance below the mouth of the harbor.

Our first notice of this bird which we regard as having been previously undescribed, and which we dedicated to its discoverer, is in the Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. VI. p. 187, (October, 1852.) The figures given in the present plate are about one-sixth of the natural size.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *LARUS*. Linn. Syst. Nat. I. p. 224, (1766.)

LARUS HEERMANNI. Cassin. Proc. Acad. Nat. Sci., Philada., Vol. VI. p. 187, (1852.)

FORM. Bill rather long and slender; wings very long, extending beyond the end of the tail; first primary longest; tail truncate or slightly emarginate.

DIMENSIONS. ADULT. Total length of skin from tip of the bill to the

*This name *Kelp* is applied to species of marine plants of the genus *Macrocystis* which grow profusely in the sea on the Pacific coast of the American continent. The species particularly alluded to as abounding on the coast of California is one of the most gigantic of plants, having been observed upwards of three hundred feet in length, and occurs in such immense and dense masses as to present formidable difficulties to the navigator. For this reason many localities of this extraordinary plant have been carefully marked in the charts containing the results of the Coast Survey now being made by order of the Government of the United States. All the recent travellers in California represent it as being cast on the shore in large quantities by the action of the sea, and it could probably be as readily applied to the production of Barilla (carbonate of soda) as any other marine species of the vegetable kingdom from which, in other countries, this important article of commerce is manufactured.

end of the tail, about $17\frac{1}{2}$ inches; wing, $13\frac{1}{2}$; tail, $5\frac{1}{2}$; bill from the angle of the mouth to the tip of the upper mandible $2\frac{1}{2}$ inches.

COLORS. ADULT. Bill red, both mandibles tipped with black; feet and legs dark; head white, which color gradually blends into an ashy lead color enveloping the entire body above and below—darker on the back and wings and paler on the abdomen. Secondary quills tipped with white, forming an oblique bar when the wings are folded. Superior coverts of the tail very pale cinereous, nearly white. Quills and tail feathers brownish black, all of the latter narrowly tipped with white. Shafts of the two first primaries white on the inferior surface of the wing.

YOUNG. Smaller, total length about 16 inches, wing 13, tail 5 inches. Entire plumage brown, darker on the head and paler on the under surface of the body; quills and tail feathers brownish black, the latter narrowly tipped with white.

HAB. Coast of California. Spec. in Mus. Acad. Philada.

OBS. We are acquainted with no species of Gull which intimately resembles the bird now described. Judging from the only description extant of *Larus Belcheri*. Vigors, which is in the Zoological Journal, Vol. IV. p. 358, and which is too short to be of service in this family of birds—it appears to resemble that species to some extent. *L. Belcheri* is much larger, and is described as having the entire plumage brownish lead-color, and as being 21 inches in total length. It appears to be, however, the only western American species with which our present bird can be confounded.



On Stone by W.^m F. Hitchcock

The Northern Sea Eagle.

Imm. ♂ White-tail

Imm. ♂ Traced & White-tail Brown Front

Haliaeetus pelagicus (Latham)

HALIAËTUS PELAGICUS.—(PALLAS.)

THE NORTHERN SEA EAGLE.

PLATE VI.—FEMALE.

THE study of the rapacious birds of western and north western America presents great attractions to the ornithologist, and a wide field for discovery.

Owing, principally, to the difficulties in obtaining, or even in observing the shy and vigilant birds of this family, their investigation is of peculiar character, and dependent on accidental opportunity in some measure every where, but especially in countries where the primitive forests yet flourish in undisturbed vigour, and which abound in unexplored and, as yet, inaccessible mountains; or in plains of an extent only known to the adventurous hunter, and traversed only by the wandering Indian, or by the pioneers of civilization: the devoted missionary, or the enterprising and hardy emigrant. Such is the character of the regions of that portion of North America, the visits of naturalists to which have been too transient to afford proper opportunities for the study of the rapacious birds, and the detached items of information which have appeared from time to time are not sufficiently numerous to be regarded as giving any clear insight into their history.

The naturalist, generally travelling expeditiously with a military or other party on business for the government, or with a caravan of emigrants, may get a glimpse of a Falcon of singularly novel and beautiful plumage as it darts away into concealment; or may see, occasionally, an Eagle seated at ease, and viewing the novel cavalcade leisurely, but beyond the range of his rifle; or as he performs, in turn, his assigned duty, and guards his sleeping companions in the encampment, his watch-fire may attract clamorous night birds of strange forms whose cries are unfamiliar to him, but to his practised ear may present unmistakable family relationship, yet it is readily demonstrable that the proper study of those birds requires facilities of a description only attainable in the course of more protracted residence and frequently recurring opportunities.

The discovery in western America of the Californian Vulture, second in size only to the great Condor of the Andes; of the Ferrugineous Buzzard,

Archibuteo ferrugineus, one of the handsomest of the American Falcons; of the Burrowing Owl, a very remarkable species which lives in holes in the ground; of the Little Californian Owl, *Athene infulcata*, the most diminutive of its family yet discovered in the United States, and of other curious species, may be regarded as affording an indication of the interesting results in this group of birds which will reward the future labours of naturalists and travellers in those vast and diversified regions.

The bird which is the subject of our present article is the largest and most powerful of the Eagles. It is a native of the remote sea-coasts of northern Asia and America, and has been especially observed in the group or girdle of islands which extends from one continent to the other.

It also, very probably, extends its range into the interior of Russian America, and possibly southward, in the winter season, into Oregon and California. In size, and in the strength of its beak and talons, this gigantic Eagle far surpasses any other of its tribe. The Golden Eagle, and the White-headed Eagle, are comparatively insignificant; and if its habits correspond to its powerful organization, as may safely be presumed, it is one of the most destructive of the rapacious birds. It appears, however, like other species of its genus, to prey principally on fishes, which are caught either by its own exertions, or appropriated summarily by the right of the strongest, from the acquisitions of more expert or more successful fishermen.

Though, like the White-headed or Bald Eagle, the range of this extraordinary bird may be very extensive, yet the solitudes of the extreme northern parts of the two continents appear to be its proper home; where, it has been fully demonstrated, that although the resident animals of the land are necessarily restricted in numbers, the sea teems with multitudes of inhabitants. There, in the bleak regions of almost perpetual winter, the Great Sea Eagle reigns, a mighty chieftain, without a competitor, and with power unrivalled: finding ample subsistence in the arctic quadrupeds, and in the fishes of the northern seas, or occasionally levying tribute from the hosts of feathered travellers that make their annual pilgrimage to the places of their nativity, and intrude on his domain. Even the famous Condor of the Andes, the largest of Vultures, scarcely exceeds him in size, and in swiftness of flight, and power of beak and talons, is much his inferior.

Pallas, a celebrated Russian naturalist, was the first who gave a satisfactory and reliable account of this Eagle, in his *Zoology of Asiatic Russia*, I. p. 343, (published at St. Petersburg in 1811, though printed many years previously,) but it appears to have been previously noticed by the distinguished navigators, Steller and Billings.

Before the time of Pallas, and, it may be added, since, also, various reports

of remarkable and sometimes very large Eagles having been seen in different parts of America, were from time to time made by travellers and voyagers. In fact, some are carefully and credibly described which are yet unknown to naturalists. Capt. Cook, in the account of his last voyage, or rather in that part of it which was written by himself, states that several Eagles, one of which is very remarkable, were seen at Kayes' Island, on the northwest coast of America, in latitude $59^{\circ} 49' N.$ "We saw," he says, "flying about the woods, a Crow, two or three of the white-headed Eagles, mentioned at Nootka, and another sort full as large, which appeared also of the same colour, or blacker, and had only a *white breast*." Last Voyage, II. p. 352, quarto, London, 1784. It is necessary for me to say only, that no species of Eagle having a white breast is yet known as an inhabitant of any part of America.

In the History of the Expedition of Lewis and Clarke it is stated, that "The Calumet Eagle sometimes inhabits this side of the Rocky mountains. The colours are black and white, beautifully variegated. The tail feathers, so highly prized by the natives, are composed of twelve broad feathers of unequal length, which are white except within two inches of their extremities, when they immediately change to a jetty black, the *wings* have each a large circular *white spot* in the middle, which is only visible when they are extended." II. p. 188, Philada., 1814. This statement, though it appears to have been usually regarded as referring to the Golden Eagle, does not apply to any established species, but it is worth bearing in mind that in the number of the feathers of the tail, the bird here alluded to agrees exactly with Audubon's Washington Eagle, (Orn. Biog. I. p. 63.)

The black-cheeked Eagle of Pennant, said to be from North America, (Arc-tic Zoology, I. p. 227,) and which is *Falco americanus*, Gmelin, is described as being "about the size of the Golden Eagle, but with the head, neck and breast of a *deep ash colour*, each cheek marked with a broad black bar, passing from the corner of the mouth beyond the ears; back, belly, wings and tail, black."

One of the most remarkable of these mysterious birds is the White Eagle, represented by Du Pratz as inhabiting Louisiana, of whose description of which the following is a translation: "The Eagle, the king of birds, is smaller than the Eagle of the Alps, but it is much handsomer, being *almost entirely white*, and having only the extremities of its wings black. As it is rather rare, this is a second reason for rendering it esteemed amongst the people of the country, who buy at a high price the feathers of its wings to make the ornament of the symbol of peace, and which is the fan of which I have spoken in giving a description of the Calumet." Du Pratz, Histoire de la Louisiane, II. p. 109, Paris, 1758. On the faith of this description, the species supposed

to be alluded to has been named *Falco candidus* by Gmelin. If not an albino, there is a possibility that it is a species of a group of white hawks, of rather large size, which are principally found in South America, and one species of which (*Buteo Ghiesbrectii Dubus*,) is known to inhabit Mexico. The latter would agree very well with Du Pratz's description, so far as it goes.

That excellent and reliable naturalist, the Prince Maximilian of Wied, whose Travels in the interior of North America contain much valuable information in nearly all departments of Zoology, mentions a "Grey Eagle of enormous dimensions," I. pp. 203, 214, (Reise in das innere Nord-America, Quarto, Coblenz, 1839.)*

But there is no end to the accounts of strange Eagles given by travellers and naturalists. Some of them may have reference to peculiar species which have in later times escaped attention, but the probability is, that they more frequently allude to accidental varieties, or that the authors describe from such reports as they had heard at second hand, or fell into error from insufficient personal observation.

Several of the naturalists who have recently visited California have informed us that they saw occasionally large species of Eagles, or other large rapacious birds, of which they did not succeed in procuring specimens, nor in approaching within sufficiently short distance to be enabled to examine them satisfactorily.

We have introduced the extraordinary bird which is the subject of our present article, thus early into our work, for the purpose mainly of asking attention to a most remarkable and interesting species heretofore apparently entirely unknown to American Ornithological writers, and also on account of its similarity, in some respects, to one of the most important of Audubon's discoveries, the Washington Eagle. This celebrated author was not acquainted with the bird now before us.

The specimen of the Washington Eagle, described and figured by Audubon, does not appear to have been preserved, or at any rate is not known to be extant, nor does it appear that he ever procured more than one. His drawing, however, with some others of species which he had met with but once, appears fortunately to have escaped the destruction of his collection of pictures of birds by rats, as described in his Ornithological Biography, Vol. I. Introductory Address, p. 13, (Edinburg edition, 1831.)

We have no doubt that such a species exists, or in other words, that Audubon is entirely correct in regarding his bird as a peculiar species; and we think it quite impossible for his description and history to apply to the young

* Nearly the whole of the Zoological portion of this important work is omitted in the English edition (Quarto, London, 1843.)

of the common White-headed or Bald Eagle, as has been supposed by some American, and by nearly all late European Ornithologists. But we are disposed, at present, to question the correctness of his plate, and also his statement that the bird represented was an "adult male" (*Orn. Biog.* I. p. 62). We are aware, of course, that the plate may not be a fair representation of the drawing, and in fact it has not been very carefully engraved. The tail appears to be unfinished. Having, however, quite sufficient knowledge of the difficulties in getting up correct plates of birds, we are enabled fully to appreciate the disadvantages under which this distinguished Ornithologist, with all his artistic knowledge and perseverance, must necessarily have laboured at the commencement of his great work, and his plate of the Washington Eagle is one of the earliest, being the eleventh of the series.

The bill, as represented in the plate, is shorter than we have ever seen in any adult Eagle of this group (the fishing Eagles), and above all the arrangement of the scales on the tarsi anteriorly, is such as we have never observed in any rapacious bird whatever.

Notices of the Washington Eagle having been captured, have appeared occasionally (as in Nuttall's *Manuel*, I. p. 71, and the *Boston Journal of Nat. Hist.* III. p. 72), and we have seen numerous specimens of Eagles of a size so large that they could not, without much doubt, be referred to the common white-headed species. But we have never seen nor heard of a specimen which presented all the peculiar characters represented in Audubon's plate, and especially the anterior scales of the tarsus continued transversely so far down to the toes. The pointed and slender feathers of the neck, the large size, and in one specimen of a young bird, the short bill we have seen, and there are specimens now in the collection of the Philadelphia Academy in which these characters will be found, but not the peculiar arrangement of the scales of the tarsus. All other species of fishing Eagles have the head more or less marked with white in their mature plumage. In Audubon's plate of the Washington Eagle, the head is of the same deep brown as the other parts. From analogy, therefore, it may safely be presumed that he was mistaken in supposing his specimen to be that of an adult male bird.

An interesting feature in the large specimens to which we allude, is the fact that they almost invariably have the ends of their tails broken as though injured by alighting habitually on rocks, or on the ground, thus apparently confirming Audubon's statements. Young birds are however peculiarly liable to such injury on account of their feathers not possessing the strength and rigidity of more mature plumage.

Respecting the Washington Eagle, our conclusion is, therefore, after many years of attention to American birds, and especially to obscure or little known

species, that of the existence of such a species in North America as is described by Audubon, in *Ornithological Biography*, I. p. 58, there can be no reasonable doubt. But we are of opinion that when adult it is very probably a bird with the head more or less white, and tail of the same colour; and we are disposed to regard the plate in *Birds of America* as erroneous, for reasons above intimated, or for others not at present demonstrable, and at all events as representing a young specimen. Waiving the presence of the character of the scales of the tarsi as above stated, we think that we have several times seen the young of the Washington Eagle, and that specimens of it are now in the collection of the Philadelphia Academy. It is not, however, so large as the immense Eagle which in the present article, and accompanying plate, we have the pleasure of presenting to the American public for the first time, but it appears to us to be more nearly related to it than to any other species.

The Eagle mentioned in the History of the Expedition of Lewis and Clarke, as cited in a preceding page, we are inclined to suspect to be the present species, but should not be surprised if it should be ascertained by succeeding naturalists to be the adult of the Washington Eagle.

The great Eagle now before us has never been observed as yet by an American voyager, and few specimens only are contained in European museums. The only specimen in the United States is that in the collection of the Philadelphia Academy from which the drawing was made for the present plate.

We have added as a suitable conclusion of our present article a translation of the original account of this Eagle as given by Pallas, and which will be found in his *Zoology of Asiatic Russia*, as cited above:

“Steller, worthy of a better fate, first observed this remarkable species, and in his manuscripts briefly described it. Now, also, I have before me an elegantly prepared specimen from my friend Billings, who, with the last navigator, explored the ocean between Kamschatka and America. This very large bird is frequent in the islands between Kamschatka and the American continent, especially in the islands noted for the unfortunate shipwreck and death of Bering. It appears very rarely in Kamschatka itself. In the highest rocks overhanging the sea, it constructs a nest of two ells in diameter, composed of twigs of fruit and other trees, gathered from a great distance, and strewed with grass in the centre, in which are one or two eggs, in form, magnitude and whiteness, very like those of a Swan. The young is hatched in the beginning of June, and has an entirely white woolly covering. While Steller was cautiously viewing such a nest from a precipice, the parents darted with such unforseen impetuosity as nearly to throw him headlong; the female having been wounded, both flew away, nor did they return to the nest which was

watched for two days. But, as if lamenting, they often sat on an opposite rock. It is a kind of bird, bold, very cunning, circumspect, observant, and of savage disposition. Steller saw a Fox (*Vulpes lagopus*) carried off by one and dashed upon the rocks, and afterwards torn in pieces. It lives also on dead substances cast up by the sea, and various offscourings of the ocean."

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS HALIAËTUS. Savigny, Description of Egypt, Zoology, p. 85, (1809.)

Size, large. Bill, strong, straight at the base, hooked and very sharp at the point, sides of the bill compressed, margin of upper mandible, slightly festooned. Wings rather long and pointed, formed for rapid and vigorous flight; tail moderate. Tarsi short, very strong, and with the toes, covered with scales; claws very strong, curved and sharp. About ten or twelve species known, which are scattered throughout the surface of the globe.

HALIAËTUS PELAGICUS. (Pallas.)

AQUILA PELAGICA. Pallas, Zoographia Rosso-Asiatica, I. p. 343, (St. Petersburg, 1811, Quarto.)

"AQUILA MARINA. Steller, MSS." Pallas *ut supra*.

FALCO IMPERATOR. Kittlitz, Kupfertafeln zur naturg. der Vogel pt. I. p. 3, pl. 2, (Frankfurt, 1832.)

FALCO LEUCOPTERUS. Temminck. Pl. col. I. pl. 489.

HALIAËTUS PELAGICUS. (Pallas.) Temm. & Schl. Fauna Japonica, Aves p. 10, pl. 4.

HALIAËTUS IMPERATOR. (Kittlitz.) Bruch in Isis XXV. p. 1102, (1832.)

FORM. Very large and powerful, tail rather short, wedge shaped, the middle feathers being nearly four inches longer than the outer, which are shortest, all of the fourteen feathers somewhat pointed, but the central four lanceolate.

Bill strong, much compressed, very wide laterally or in altitude; upper mandible with a slight festoon; gape rather wide, extending so far back as to be immediately under the eye; cere large, in which at the distance of nearly an inch from the frontal feathers, the nostrils are obliquely inserted, large loreal space bare, or with a few scattered bristles.

Wings rather short, third and fourth quills longest, but with the fifth little shorter; secondaries abruptly acuminate, and some of them with their shafts produced into filaments or thread-like appendages, exerted from the tips of the feathers; secondaries and greater coverts very broad and strong.

Legs and feet rather short, but strong; tarsus feathered below the joint for half its length, bare lower portion, with about five large frontal scales imme-

diately succeeding the feathers; then to the toes in common with its entire posterior part, covered with numerous scales, which are rounded or hexagonal: the latter shape most readily observed behind; toes, with broad frontal scales; claws large.

Feathers of the head and neck, narrow and pointed, or acuminate; those on the breast and back, somewhat lanceolate, but broad, and sometimes abruptly pointed. Tail coverts, both above and below, ample—extending to half the length of the tail.

Dimensions of a skin from Behrings Straits. Total length from tip of bill to end of tail, about 3 feet 8 inches; wing, 2 feet 2 inches; tail, 1 foot 4 inches; bill, from tip of upper mandible to angle of the mouth, $3\frac{3}{4}$ inches; width of bill, laterally, at point of insertion of the nostrils, full $1\frac{1}{2}$ inches.

COLOURS. Female, nearly adult? Tail, white, the two external feathers having their outer webs, brownish black, mottled with white, and other feathers slightly spotted with the same brownish black. Entire other parts, above and below, very dark brownish black; lighter on the head and neck, and on which parts every feather is lighter in the middle.

Primary quills, shining black; secondaries and tertiaries, white at their bases, and brownish black at their ends; greater coverts narrowly tipped with brownish white; lesser coverts whitish on both margins, especially at their bases, terminated with brownish. Rump with the plumage white at the base.

Bill, yellow, (in skin,) feet, yellow.

Adult, as described by authors cited above. Large frontal space, commencing at the base of bill, white, which is also the colour of the greater wing coverts, the abdomen, and the tail. All other parts of the plumage blackish brown; bill, cere, legs and feet, yellow.

HAB. Russian possessions in Asia and America. Spec. in Mus. Acad. Philada.

Obs. The largest of all known Eagles, and nearly related to *H. Washingtonii* (Aud.). It differs from the latter, as described by Audubon, in being larger generally, but has the wing shorter and the tail wedge shaped, and containing fourteen feathers. We suppose *H. Washingtonii* to be the young of a closely allied species, and that both are strictly congeneric with *H. leucocephalus*, *H. albicilla*, *H. vocifer*, and others known as Fishing Eagles.



On Stone by Wm. L. G. 1851

The ground Wren

Geo G White del.

and Printed & Col'd by J. J. Lockman, Phila.

Chamaea fasciata (Swamp)

CHAMÆA FASCIATA.—(GAMBEL.)

THE GROUND WREN.

PLATE VII.—ADULT MALE.

THIS little bird was discovered in California, by William Gambel, M. D., an enthusiastic and highly talented young naturalist, who, during an overland journey across the North American Continent, made many discoveries, and added much valuable information to several departments of Natural History, and we regret to say, whose recent death, during a second expedition of the same character, occurring, as it did, so early, and thus terminating so prematurely a life of such promise, is to be deplored as a loss to science and to his country.

Dr. Gambel's account of this bird in the Proceedings of the Academy of Natural Sciences of Philadelphia, II. p. 265, and in the Journal of the same society, quarto, I. p. 34, which is the first and, as yet, the most satisfactory, is as follows: "For several months before discovering the bird, I was attracted in the fields of dead mustard stalks, the weedy margins of streams, low thickets and bushy places, by a continued loud, crepitant, grating scold, which I took for that of a species of Wren, but at last found it to proceed from this Wren-tit, if it may be so called. It was difficult to be seen, and kept in such places as I have described, close to the ground; eluding pursuit by diving into the thickest bunches of weeds and tall grass, or tangled bushes, and uttering its grating Wren-like notes whenever approached. But if quietly, watched, it may be seen, when searching for insects, mounting the twigs and dried stalks of grass sideways, jerking its long tail, and holding it erect like a Wren, which, with its short wings in such a position, it much resembles.

"Sometimes it utters a slow, monotonous, singing chicadee note, like *pee, pee, pee, pee, pee, peep*; at other times its notes are varied, and a slow whistling continued *pwit, pwit, pwit, pwit*, is heard. Again, in pleasant weather, towards spring, I have heard individuals answering each other, singing in a less solemn strain not unlike sparrows, a lively *pit, pit, pit, tr, r, r, r, r, r*, but, if disturbed, they at once resumed their usual scold."

Mr. Bell, whose collection contained numerous specimens of this bird, found

it abundant in the neighbourhood of San Francisco, and has kindly allowed us to use his memoranda: "I observed this bird in bushes and briars every where along the roads, and in brush heaps on lands which had been recently cleared, though it appeared rather to prefer damp places. It was very pert, and not easily frightened, and as it moved about with its tail erect, uttered several rather peevish notes, unlike those of any other bird with which I am acquainted.

"The white iris of this bird, when in its native haunts, is quite readily observed, and with its manners and the localities which it frequents, reminded me, in some measure, of the white-eyed Vireo, (*V. noveboracensis*.) Its skin is unusually strong for such a small bird, and it has a remarkable development of the muscles of the thighs, and, in fact, unusual strength and firmness of the muscular system generally."

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CHAMÆA. Gambel in Proceedings Acad. Philada. III. p. 154, Feb., 1847.

Bill short, slightly curved, rather acute, both mandibles entire, ridge of the upper curving nearly from the base, depression for the nostrils large, oval and exposed, nostrils opening beneath a membrane in the depression. Wings very short, rounded; tail long, and graduated; tarsi long, and rather slender.

One species only known.

CHAMÆA FASCIATA. (Gambel.)

PARUS FASCIATUS. Gambel, Proc. Acad. Philada., II. p. 265. August, 1845.

FORM. Body rather short and robust; wings short and rounded, with the sixth and seventh primaries longest, and nearly equal; tail long and graduated, external feathers about an inch and a half shorter than those in the middle of the tail. Entire plumage of the body composed of long, silky, puff-like feathers.

Dimensions of a skin from California. Total length from tip of bill to end of tail, about $5\frac{1}{2}$ inches; wing, $2\frac{1}{2}$; tail, $3\frac{1}{2}$ inches.

COLOURS. MALE. Head very dark cinerous, lighter on the cheeks and sides of the neck; back, rump, external margins of the quills and tail feathers olive brown. Wings and tail dusky brown; the latter with many crimp-like transverse lines of darker, more distinct in some specimens than others; quills also with similar lines on their inner webs, but frequently very obscure.

Beneath, from the base of the mandible to the abdomen, pale reddish, running into olive on the flanks, and with many of the feathers on the throat and

breast having longitudinal stripes of light cinereous olive; under tail coverts brown.

A distinct ring around the eye, and spot on the nares, whitish cinereous.

Bill and feet, dark brownish black.

Iris, white

FEMALE. Similar to the male, but with the colours rather less vivid.

HAB. California. Spec. in Mus. Acad. Philada.

OBS. We consider this bird as decidedly related to the Wrens, and as forming a well characterized genus, of which it is, as yet, the only known species. It is frequently brought in collections from Western America.

The plant represented in the plate is the *Eschscholtzia Californica*, a native of California.

The figure in our plate is about three-fourths of the natural size.

ICTERUS CUCULLATUS.—(SWAINSON.)

THE HOODED ORIOLE.

PLATE VIII.—MALE AND FEMALE.

SOME of the most beautiful of the American Orioles are inhabitants of Mexico. Of these, we present, in the plate now before the reader, one of the smallest of the species, which, though it cannot compete with many others of its more richly coloured relatives, is still entitled to make considerable claims. The various shades of the richest yellow colours are almost exhausted in the splendid species of these birds which are found in Mexico, and in South America, and as an accompaniment to the luxuriant vegetation of those countries, they form, necessarily, a most agreeable and interesting feature.

The birds of this family represented in the northern portion of this continent, by the Baltimore Oriole, are remarkable for their skill in constructing elaborately formed and pendent nests, frequently of large size. Several of the South American species make them of grasses, intricately and substantially woven, and shaped like a purse or bag, with the entrance sometimes from the top, but more frequently ingeniously inserted in the side, near the lower end. They are usually suspended from the pendent branches of trees, and often near the habitations of men. The Baltimore Oriole builds a nest sufficiently similar to afford an idea of the general character of the nests of these birds, but those of several of the southern species are much more artfully and elaborately constructed.

The handsome little bird at present before us, was first described from Mexican specimens, by Mr. Swainson, in the *Philosophical Magazine*, 1827, p. 436, (London.) It is an inhabitant, also, of Texas, where it was repeatedly observed by our friends Col. McCall and Capt. McCown, the latter of which gentlemen has most kindly communicated the following with other valuable notices:

“This beautiful Oriole is quite common on the Rio Grande, where it raises its young. When met with in the woods, and far away from man’s abode, it is shy, and seems rather disposed to conceal itself, yet a pair were constant visitors, morning and evening, to the vicinity of my quarters (an unfinished



On stone by W. E. Hutchcock

The hooded Oriole

Icterus cucullatus (Swainson)

building at Ringgold Barracks, Texas. They became so tame and familiar that they would pass from some ebony trees that stood near by, to the porch, clinging to the shingles and rafters, frequently in an inverted position, prying into the holes and crevices, apparently in search of such insects as could be found there, which, I believe, were principally spiders. They would sometimes desist for a moment from this occupation, to observe my movements, and if I happened to be enjoying a cigar after dinner, seemed to watch the smoke with great curiosity. I often offered them such hospitality as was in my power, but could never induce them to touch any food, in which respect they were very different from the large black birds, whose acquaintance I also cultivated. I have seen the nests of this species, but never had an opportunity to examine them."

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *ICTERUS*. Brisson Ornithologie, II. p. 85, (quarto, Paris, 1760.)

Bill, conic, straight, or slightly curved, and entering the frontal plumes, point acute, nostrils basal partly covered by a membrane. Wings, rather long and pointed; tail, long; tarsi moderate, slender, covered with scales. Colours, generally yellow and black. About twenty-five species known, all of which are natives of America.

ICTERUS CUCULLATUS. Swainson in Philos. Mag., 1827, p. 436.

FORM. Slender and delicate; bill, very acute, curved; wing, rather short, with the third quill longest; tail, rather long, graduated; tarsi and feet, slender.

DIMENSIONS. Total length (of skin) from tip of bill to end of tail, about $7\frac{1}{2}$ inches; wing, $3\frac{1}{2}$; tail, 4 inches; female, slightly smaller.

COLOURS. MALE. Narrow frontal band, throat and neck in front, and space extending to the eye, back, wings and tail, glossy black. External edges of the quills, and tips of wing coverts white, the latter forming two white bars on the wing. Upper part of the head and neck, rump and upper tail coverts, and all the under parts, fine golden yellow, paler on the abdomen. Inferior wing coverts, and tail feathers at their basis, pale yellow. Bill, bluish horn colour.

FEMALE. Entire upper parts, olive green, tinged with yellow on the head and rump. Wings, pale brown; coverts, tipped with white, and quills narrowly edged with white; tail, above, yellowish green. Entire under parts, greenish yellow.

HAB. Texas and Mexico. Spec. in Mus. Acad. Philada.

OBS. This species does not intimately resemble any other of its group, though partaking of their general style of colouring, and can be readily recognized by the student. Very fine specimens were obtained in Texas by Capt. McCown, which are now in the collection of Mr. George N. Lawrence, of New York, to whom we are indebted for an opportunity to figure the female. The latter does not resemble the male in colour.

Our figures are about two-thirds of the natural size.



Quail by Wm E. Hitchcock

Gambel's Partridge

Callipepla gambelii (Aud.)

Lith. Printed & Col'd by J. T. Bowen, Phil.

CALLIPEPLA GAMBELII.—(NUTTALL.)

GAMBEL'S PARTRIDGE.

PLATE IX.—MALE AND YOUNG FEMALE.

MEXICO and the adjacent parts of the United States are particularly productive of game birds, and amongst them are several species of Partridges, unrivalled in beauty of plumage by those of any other country of the world. Of those, some prefer fertile valleys, or grounds under cultivation; others appear to live almost entirely in the barren plains, or in the mountains.

Independently of the usefulness of those birds as food, to the citizens of the States alluded to, and to those who, in future years, shall occupy with their farms and homesteads districts yet unpeopled, the numerous game birds must always be a source of constant interest and amusement. Like the Deer, and like the Turkey, Grouse, and Partridge of other States, their pursuit is not only an easily attainable amusement, but serves also for the cultivation of a knowledge of, and expertness in the use of firearms, which are peculiarly characteristic of our vigorous and successful population, and have contributed in an important degree to the formation of the character of the world-renowned citizen-soldier of the United States.

Experience in hunter life, and the incidental influences of its occupations and associations, are no inconsiderable features in American education; and the invigorating and healthful pursuits of the youthful hunter or trapper have always appeared to us to be no unimportant agents in the development of his physical and of his intellectual constitution. In large portions of every State of the Union, the gun or the rifle is the favourite companion of almost every boy from the earliest period of his competency for its management; and we have seen abundant instances, in our early days, of very considerably forced presumption of competency. In fact, the stranger, in very many of the rural districts of the United States, might almost be tempted to conclude that the famous ancient formula of early education had been adopted, with an addition: "Learn to speak the truth and to swim"—and to shoot.

The beautiful Partridge now before us was discovered a few years since in New Mexico, by Dr. William Gambel, in honor of whom it has been named.

The first description of it is in the Proceedings of the Academy of Natural Sciences of Philadelphia, I. p. 260, April, 1843, and afterwards was reprinted in the Journal of the same society, I. p. 219, (Quarto.)

Since that period it has repeatedly been observed, and we have now the gratification of being able to present to our readers a particular history of this fine species.

Our friend, Captain S. G. French, of the United States Army, to whose kindness we have previously been indebted, has favoured us with the following interesting account:

"This species was found by me on the Rio Grande, some seventy miles below El Paso; and from that point to the place just mentioned, the numbers constantly increased. They seem to be partial to the abodes of man, and are very numerous about the old and decayed buildings, gardens, fields, and vineyards around Presidio, Isileta, and El Paso. During my stay there in the summer of 1851, every morning and evening their welcome call was heard around us, and at those early and late hours they were constantly to be found in the sandy roads and paths near the villages and farms. In the middle of the hot summer days, they rest in the sand, under the shade and protection of the thick *chapparal*; and, when disturbed, they glide through the bushes very swiftly, seldom resorting to flight, and uttering all the while a peculiar chirping note, by which they appear to be enabled to keep together. The parent birds would utter the same chirp whenever I endeavoured to capture their young. The male and female were always found with the young birds, and showed much affection for them, even endeavoring to attract my attention to themselves by their actions and cries."

Col. George A. McCall, the accuracy of whose knowledge of the birds of Western America is unrivalled, gives an interesting account of this bird in his "Remarks on the habits, &c., of Birds met with in Western Texas, between San Antonio and the Rio Grande, and in New Mexico," published in the Proceedings of the Philadelphia Academy, V. p. 213, (June, 1851):

"After losing sight of the Massena Partridge, I did not fall in with the present species until we reached the Limpia river, about 100 miles west of the Pecos.

"This beautiful bird, whose habits, in some respects, bear resemblance to the common partridge, like that, seems to prefer a more genial and hospitable region. In this part of the country, the Mesquite tree (*Acacia glandulosa*) is more or less common; and the Mesquite grass, and other plants bearing nutritious seeds, are abundant. Here, this partridge increases rapidly in numbers, and becomes very fat; and, as I afterwards ascertained, is much disposed to seek the farms, if any be within reach, and to cultivate the

acquaintance of man. About the rancho of Mr. White, near El Paso, I found them very numerous; and here, in flocks of fifty or a hundred, they resort, morning and evening, to the barn-yard, and feed around the grain stacks, in company with the poultry, where they receive their portion, as it is scattered amongst them by the hand of the owner. I found them distributed through the country from the Limpia to the Rio Grande, a range from east to west exceeding one hundred miles; and along the Rio Grande, from Eagle Spring Pass to Don Ana, a distance of one hundred and twenty miles. North of this I did not see them. I was not among them during the season of incubation."

But the most comprehensive and complete account ever before published of this Partridge, has been furnished by the same gentleman (Col. McCall) for insertion into our present article; for which, and for many other similar favours from him, we beg to tender our deep sense of obligation.

"Whilst in California, during the last summer, (1852,) I was enabled to ascertain the western limit of this species as satisfactorily as I had previously ascertained its eastern limit within the State of Texas. And, although the extent of its range to the north is not yet clearly established, it may be said that the portion of our territory inhabited by this beautiful bird is a rather narrow belt of country, (say one thousand miles long by two hundred broad,) embraced between the 31st and 34th parallels of north latitude, and extending from the Pecos river in Texas to the Sierra Nevada and the contiguous desert in California. Be it understood, however, that when I speak of a narrow belt of country along a certain parallel, I do not intend to say that the *habitat* of the species does not extend beyond this belt into *Mexico*; but that the river Gila being our southern boundary through the greater part of the region referred to, the portion of our own territory inhabited by this bird is confined to such a belt as I have indicated.

"First, then, with respect to its western limit. This species was discovered by Dr. Gambel, 'on the eastern side of the Californian range of mountains, in 1841.' He did not meet with it on the western side; nor has it, as far as made known, been found there since that time by others. During the last summer, search was made for it by several gentlemen who were interested in the subject, as well as by myself, in different localities from north to south along the Pacific slope, but in every instance without success. Hence, the inference must be that this Partridge has never crossed to the west of the Sierra, where, as we well know, it is abundantly replaced by the closely allied species, the '*California Partridge*.' Following down the Sierra Nevada to its junction with the coast-range, you come upon a desert of sand of vast extent; and as the snowy peaks of the Sierra had stopped the march of this

species above, so did the burning sands of the desert stop its progress below, and effectually shut it out from the Pacific plain. It is true I found it at *Alamo mucho* (cottonwood grove), which is 44 miles west of the Colorado river. Thus far it had penetrated into the dreary waste, and had managed to find shelter and subsistence where there is little to support animal life. But from this *oasis* to *Valle-cita* (little valley), it is seventy miles. In this interval, a vast ocean of sand presents a formidable barrier, as is but too plainly indicated by the bleached bones of horses and mules scattered along the route—and this barrier effectually separates the two congenerous species of partridge: the range of *Gambel's Partridge* being confined to the east of this desert, while the range of the *California Partridge* is confined to the west of it—although on both sides they approach to the very edge, as I ascertained from personal observation.

“In the second place, with respect to its eastern limit—I have to repeat that I did not meet with this species in Texas, either in going or returning, anywhere east of the Pecos river; nor was it found by either of three other parties who explored those regions, both previously and subsequently, until after they had passed to the west of that river. Here, again, a sandy desert, between the Pecos and Devil's river, is the barrier beyond which the species under consideration has not extended its range to the eastward; and, as it is replaced beyond the Sierra and the desert in the west by the *California Partridge*, so is it replaced beyond the Pecos in the east by the *Massena Partridge*.

“With regard to the northern and southern limits of this species, less is known. I found it in 1850, on the Limpia creek, in N. Lat. 31° —thence to the Rio Grande, and up that river to Don Ana, Lat. 33° . But I found it nowhere beyond that point, either near the river or among the hills as far back as the foot of the Sierra de los Mimbres, and I passed up and down between El Paso and Santa Fe at different seasons of the year; yet through all this country I met with the *Blue Partridge* (*C. squamata*). The species in question, however, is known to be abundant in the country around the sources of the Gila river. It has also been found along that river, from the Pimo villages to its mouth; and there is no doubt it inhabits the entire valley of the Gila. It was common along the Colorado river, as far up as Camp Yuma (mouth of Gila), and it has been met with in that valley as high up as Yampai creek, N. Lat. 34° , but I have no information of its having been found north of that parallel.

“The habits of this species are, in most respects, similar to those of the *California Partridge*; but it has always appeared to me less vigilant and wild. I was not so fortunate, however, as to discover its nest; nor did I gather from

others any information as to its eggs—their colour or their markings. I frequently heard the call or song of the male bird during the period of nesting, which, from some cause or other not apparent to me, was later than that of its congener. As early as June 4th, I found covies of the young of the *California Partridge* large enough to fly—say one-fourth grown; whilst all the birds of this species (and I saw many,) as late as June 16th, were still without their young. But the voice of the male, as I was about to remark, is, at this season, strikingly rich and full. A very good idea may be formed of his cry by slowly pronouncing, in a low tone, the syllables ‘*kaa-wale,*’ ‘*kaa-wale.*’ These notes, when uttered close at hand, are by no means loud; yet it is perfectly astonishing to what a distance they may be heard when the day is calm and still. There was to me something extremely plaintive in this simple love-song, which I heard for the first time during a day of burning heat passed upon the desert. I had reached the well at *Alamo mucho* before noon, and had halted to rest my jaded mules after their toilsome march. Here is, in truth, a desert!—figure to yourself, if you can, a portion of this fair earth, where, for some hundreds of miles, the whole crust seems to have been reduced to ashes by the action of internal fires; behold a vast plain of desolation, surrounded, and, at intervals, intersected by abrupt mountain ranges, which are little better than gigantic heaps of scoria; imagine this scenery to be actually glowing under the direct rays of a midsummer sun, and you may have some idea of the prospect that meets the eye of the traveller who looks out upon the desert from the well of the Alamo. You may perceive in his rear a few stunted cottonwood-trees scattered along the edge of a channel, in which, apparently, water once *was*, but now is not; whilst around him, here and there, is a light-leaved mesquite that stretches forth its slender arms, and appears to invite him to a shade which is but a mockery. Here it was that I first heard the plaintive voice of this bird as he strove to cheer his mate whilst occupied in the tedious task of incubation.

“I had passed the hours of noon stretched upon the sand near the well: the thermometer, in the best shade to be obtained, indicating a temperature of 140° to 150°, (*Fahrenheit*); and as the sun began to decline towards the horizon, the first wakeful sound of animal life that greeted my ear was the soft ‘*kaa-wale,*’ ‘*kaa-wale,*’ of this beautiful bird. I turned towards a cluster of mesquite, at the distance of some two hundred yards from which the call seemed to come, but could discern no object in motion. This song was continued, at short intervals, for about an hour; when, at last, one of the birds came forth upon the sand, and was soon followed by its mate. They ran lightly over the sand, and glided into the gully, where they began to search for their evening meal.

I followed with my gun and secured them both—they were a male and female, the skins of which I have preserved. This was June 8th.

“Later in the season, when a covey is dispersed, the cry for assembling is ‘qua-el,’ ‘qua-el.’ The voice at all seasons bears much resemblance to that of the *California Partridge*—having, in its intonation, no similarity to the whistle of the Virginia or common partridge.

“The crops of those killed at the Alamo, and thence to the Colorado, were filled with the leaves of the mesquite, which seemed to be their principal food, though in some were found remains of coleopterous insects. In some of those killed near the river I found the wild gooseberry.

“The dimensions of this species, given by Gould in his ‘*Odontophorinæ*,’ are, (? skin) length $9\frac{3}{4}$ inches; wing, $4\frac{1}{2}$; tail, 4. By Dr. Gambel, (Proc. Acad. Nat. Sci., Philada., I. p. 260,) length, over 10 inches; wing, $4\frac{1}{2}$; tail, $4\frac{1}{2}$.

“Those I obtained in California were as follows, (measured immediately when killed):

“♂ length, $10\frac{1}{2}$ to $11\frac{3}{8}$; wing, $4\frac{1}{2}$; tail, $4\frac{1}{2}$.

“♀ “ $10\frac{3}{8}$ to $10\frac{5}{8}$; wing, $4\frac{1}{2}$; tail, $4\frac{1}{2}$.”

The identical pair of birds alluded to in this excellent and satisfactory history is represented in our plate; and the specimens, with many others collected by this gentleman, are now in the collection of the Philadelphia Academy.

Fine specimens of this bird are also now in the national collection at Washington, and were collected by Dr. Woodhouse, while attached to the party under command of Captain Sitgreaves, which surveyed the rivers Zunia and the Colorado of the west.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *CALLIPEPLA*. Wagler in Isis, 1832, p. 277.

Head, with a crest of long feathers, either pendent or erectile, and recurved; bill, short, with the upper mandible curved gradually from the base, under mandible straight, and near the tip having generally two dentations, nostrils rather large, basal, covered with a membrane. Wings, rather ample, concave, quills rigid; tail, rather lengthened, strong; tarsi rather long and moderately robust. About six species known, all of which inhabit Mexico, and the adjoining parts of the United States and California, and are birds of beautiful plumage.

“*LOPHORTYX GAMBELII*. Nutt.” Gambel. Proc. Acad. Philada., I. p. 260, (1843.)

FORM. With an upright recurved crest of about six feathers, general form robust, rather lengthened; wings, with the third, fourth and fifth quills nearly equal and longest; tail, long; feet and legs robust. Feathers in front, at the base of the bill very narrow and probably erectile.

Dimensions of skins, total length from tip of bill to end of tail, from $9\frac{3}{4}$ to $10\frac{1}{2}$ inches; wing, $4\frac{1}{2}$; tail, 4 to $4\frac{1}{2}$ inches; of living or recent bird, according to Col. McCall, as above, total length of male, $10\frac{1}{2}$ to $11\frac{3}{8}$ inches; of female, $10\frac{3}{8}$ to $10\frac{5}{8}$ inches.

COLOURS. MALE. Frontal feathers white, each having a narrow longitudinal line of black, succeeding those a transverse band of white. Top of the head, fine reddish chesnut, crest, brownish black. Throat, black, which colour is completely enclosed by an edging of white.

Entire plumage of the upper parts of the body, neck, wings, and tail, light bluish cinereous; feathers of the neck above, slightly marked in the middle with dark chesnut; flanks and sides, dark chesnut, every feather with a longitudinal strip of white; middle of the breast and abdomen white, with a large black spot on the latter. Bill, dark.

FEMALE. Throat, ashy white, with no vestige of black, as in the male. Head, above, plain cinereous, or with the colours of the male very faintly indicated; other parts of the plumage similar, but more obscure and paler. Crest, less fully developed.

HAB. Texas. Spec. in Mus. Acad. Philada., and Nat. Coll. Washington city.

OBS. Nearly related to, and, at first sight, bearing considerable resemblance to, the California Partridge, (*C. California*.) From this, however, it is easily distinguished by the entirely different colour of the inferior parts of the body, and other characters easily discovered on the most superficial examination.

According to the rule which has become part of the code of zoological jurisprudence, which has gradually formed itself, and is now almost universally adopted, the name properly to be cited as the authority for this species ought not to be "Nuttall." It was first described in a paper written by Dr. Gambel himself, without allusion to his learned friend and patron, Mr. Nuttall, as joint author, editor, or otherwise. Nevertheless, as we happen to know that that distinguished gentleman did furnish the specific name in question, and others in the paper alluded to, we, for the present, acquiesce in the citation of his name. But under no circumstances can this method be allowed as a general principle. No person is the authority for a species unless he is the first to publish a description of it, and the citing of a name as the authority for a species ought always to be based on that fact, the neglect of which has caused much difficulty and confusion in zoological nomenclature.

BERNICLA NIGRICANS.—(LAWRENCE.)

THE BLACK BRANT.

PLATE X.—ADULT MALE.

THIS is a very remarkable and distinct species of Brant, first noticed by our esteemed friend Mr. George N. Lawrence, an Ornithologist of great ability and accuracy, of the city of New York. It was described by him in a paper read before the Lyceum of Natural History of that city, and published in its Annals, IV. p. 171, (1846.)

Mr. Lawrence states in the paper alluded to: "I have taken the above description and figure from an adult female, procured at Egg Harbour, N. J., in January. Since then two others have been obtained at the same place, one of which I have in my possession. On dissection it proved to be a male. It agrees in markings with the female, but is evidently a younger bird, being somewhat lighter in the colour of its plumage. From this, I infer, they become darker by age. It is a little larger than the female, the bill being also stouter, measuring seven-eighths of an inch high at the base.

"When on a shooting excursion some years since at Egg Harbour, I noticed a bird flying at some distance from us, which our gunner said was a Black Brant. This was the first intimation I had of such a bird. Upon further inquiry, he informed me that he had seen them occasionally, but that they were not common. I have learned from Mr. P. Brasier, who has passed much time at that place, that, speaking to the gunners about them, they said they were well known by the name of Black Brant, and one of them mentioned having once seen a flock of five or six together.

"From these facts it appears to be known to gunners, but has heretofore escaped the notice of Ornithologists. With all my inquiries I have not been able to procure a specimen before this winter. I think it a good and well marked species."

We have had the pleasure of seeing the specimen described by Mr. Lawrence, and entirely coincide with him in his conclusion. It is precisely similar to others that have come under our notice, and all presenting the same peculiar specific characters.



On Shore by W^m E. Hitchcock

The Black Brant.

Geo G. White del.

Bemela nigricans (Linnæus)

Int. Printed & Colored by T. Bowen, N.Y.



To the gunners of Philadelphia this bird is known by the same name, and we have seen several specimens which have been shot in Delaware Bay, and at various points on the sea-coast. Our friend Mr. John Krider, Gunsmith, whose establishment is a favourite place of resort of the Ornithologists and gunners of this city, and who is well acquainted with American birds, and very successful in obtaining specimens of rare species, has had several specimens of this Brant brought to him within the last two or three years. It must, however, be considered as a species of rather unusual occurrence on the Atlantic coast, but perhaps not more so than the Snow Goose, and others which are well known. As is the case with the birds just mentioned, it is probable, too, that the migration of this Brant does not commonly reach so far southward as the latitude of either of the large cities on the Atlantic.

Several species of Geese, which appear to be unknown to Naturalists, have been noticed by travellers in various parts of North America, but especially in the northern and Arctic regions. Of these we shall give an account, somewhat in detail in a succeeding article; at present, we are acquainted with one allusion only, which we think it not improbable has reference to the species now before us. It is in Sir John Richardson's "Arctic Searching Expedition," a journal of a Boat voyage through Rupert's land and the Arctic Sea, in search of the discovery ships under command of Sir John Franklin, London, 1851, New York, 1852. In citing an account of the valley of the Yukon river, in about lat. 66° north, long. 147° west, contained in a letter to him from Mr. Murray, a resident in that country, the following statements occur (American edition, p. 305): "White Geese (Snow Geese, *Chen hyperboreus*) are also passengers here; and there are likewise *Black Geese*, which I presume you have never seen. A few of them pass down Peel's River, but they are more abundant on the Yukon. They are very handsome birds, considerably smaller than the White Geese, and have a dark brown or brownish black colour, with a *white ring round the neck*, the head and bill having the shape of that of the Bustard (the Canada Goose, *Anser Canadensis*). The Black Geese are the least numerous, and the latest that arrive here. They fly in large flocks with remarkable velocity, and generally pass on without remaining as the others do, some days to feed. When they alight, it is always in the water; and if they wish to land, they swim ashore. They are very fat, and their flesh has an oily and rather disagreeable taste.

"Bustards, Laughing Geese, Ducks, and large Gulls, make their appearance here from the 27th to the 29th of April; Snow Geese and Black Geese about the 15th or 16th of May, when the other kinds become plentiful. They have mostly passed by the end of the month, though some, especially the Bustards, are seen in June. The White Geese and Black Geese breed only on

the shores of the Arctic Sea. They return in September, and early in October, flying high, and seldom halting."

Sir John Richardson seems inclined to the opinion that the common Brant is here alluded to; which, however, we cannot consider so probable as that it is our present bird. So well acquainted with the water birds of Europe and America as he is, it could scarcely have been supposed by Mr. Murray that he had never seen so abundant a species as the common Brant. Besides, the white ring round the neck, as described, is exactly applicable to the Black Brant now before us, and its uniting on the front of the neck forms a peculiar character sufficient to distinguish it from any other species.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *BERNICLE*. Stephens, Continuation of Shaw's Zoology, XII. p. 45, (1824.)

Bill, small, shorter than the head, upper mandible elevated at the base, tip with a broad nail, margins of both mandibles finely serrated. Wings, long, pointed; tail, very short, rounded; tarsi, moderate; toes, rather short. Probably contains six or eight species, inhabiting various parts of the world.

BERNICLE NIGRICANS. (Lawrence.)

ANSER NIGRICANS. Lawrence, Annals N. Y. Lyceum, IV. p. 171, (1846.)

FORM. Bill and head, and feet, rather small; wings, with the second quill longest; tail, short, composed of sixteen feathers; coverts, both above and below, long, reaching almost to the end of the tail.

Dimensions, according to Mr. Lawrence. Total length $22\frac{1}{2}$ inches, alar extent 44, bill along the ridge $1\frac{1}{6}$, from gap $1\frac{3}{8}$, lower mandible $1\frac{1}{4}$, length of tarsus $2\frac{1}{4}$, middle toe 2, outer $1\frac{7}{8}$, inner $1\frac{1}{2}$, weight 3lbs.

Total length of skin from Delaware Bay, from tip of bill to end of tail about 22 inches, wing $13\frac{3}{4}$, tail about 5 inches.

COLOURS. MALE. Neck almost completely encircled by a band of white, broadest immediately in front, and narrowest behind. Head, neck, breast and abdomen, glossy black, having on the latter a brownish tinge. Upper parts of the body umber brown, nearly black on the rump, some of the feathers with paler margins; quills and tail feathers brownish black. Feathers on the sides and flanks tipped with white; upper and under tail coverts, and ventral region, white. Bill and feet dark, nearly black.

HAB. Atlantic coast, New Jersey. Spec. in Mus. Acad., Philada.

Obs. The Black Brant is nearly related to the common Brant (*B. brenta*),

but can readily be distinguished by the uniform black colour of the inferior parts of the body, and the ring on the neck uninterrupted in front, and not separated into two white patches on the sides of the neck, as in the common species. It appears also to bear some resemblance to the *Bernicla glaucogastra*, Brehm. Handb. Vogel Deutschlands, p. 849 (Ilmenau, 1831), but may be distinguished from it also by the characters just mentioned.

SYNOPSIS

OF THE

SPECIES OF BIRDS

INHABITING THE CONTINENT OF AMERICA, NORTH OF MEXICO.

I. ORDER RAPTORES. THE RAPACIOUS BIRDS.

GENERAL form, strong, muscular, and capable of vigorous and long continued flight; bill and claws usually curved and strong, and adapted to the destruction of other animals, or for preying on animals already dead. The sense of sight in many species developed in a greater degree than in any other group of the animal kingdom. Habits, in the majority of species, solitary, cautious, and very vigilant. Female larger than the male. Inhabit all parts of the world, and form a well defined and easily recognized order of birds, strikingly analogous to the Rapacious Quadrupeds.

I. FAMILY VULTURIDÆ. THE VULTURES.

HEAD and neck usually naked, and the former frequently more or less carunculated, or with the skin wrinkled; bill, strong, rather lengthened and strongly hooked; claws, usually moderate, and but slightly curved; wings, usually long and powerful. Size, generally large; body, heavy. General structure adapted to the destruction of dead animals exclusively, but a few species do not hesitate to attack young or feeble animals when living.

Inhabit the temperate and the warm regions of the earth, but are much more numerous in the latter. There are about twenty known species of Vultures.

I. GENUS CATHARTES. ILLIGER PRODROMUS, p. 236. (1811.)

CATHARISTA. VIELLOT ANALYSE, p. 21. (1816.)

HEAD and upper part of the neck, naked, or partially covered with short downy feathers; the skin of the former generally wrinkled, or with wart-like excrescences. Bill, rather long, straight, curved at the end; nostrils, large,

open, and unprotected, inserted near the middle of the bill. Wings, long, third and fourth primaries usually longest; tail, composed of twelve feathers, usually slightly rounded; legs and feet, moderate, rather strong, covered with scales, middle toe long, hind toe shortest; claws, rather strong, moderately curved, obtuse at their points. Colour of all known species, black.

Of this genus, which is peculiar to America, there are seven species; four of which are natives of the northern, and two of the southern portion of this continent, and one of the West Indies. All of them much resemble each other in their habits, and the two South American species are nearly related to similar species of the North, as will be pointed out in descriptions of the latter now to be given. In all its essential characters, this genus differs very little from *Sarcoramphus*, which includes the *Condor* and the *King Vulture* of South America.

A.

I. CATHARTES AURA. (Linn.) The Turkey Buzzard. The Turkey Vulture.

VULTUR AURA. Linn. Syst. Nat., I. p. 122. (1766.)

CATHARTES SEPTENTRIONALIS. De Weid Reise, I. p. 162. (1839.)

Catesby Nat. Hist. Carolina, I. pl. 6. Vieill. Ois. d'Am. Sept. I. pl. 2.

Wilson Am. Orn. IX. pl. 75, fig. 1. Aud. B. of Am. pl. 151.

Plumage, commencing on the neck with a circular ruff of rather long and projecting feathers. Head and upper part of neck, naked, or with scattering, down-like feathers, especially on the vertex, and with the skin wrinkled. Nostrils, large, oval, communicating with each other; tail, rather long, rounded.

Entire plumage, brownish black, darkest on the neck, back and tail above; many feathers having a purple lustre on the upper and under parts of the body, and with pale brownish borders on the upper parts. Bill, yellowish white; wings and tail, paler beneath. Head and neck, in living bird, bright red.

Total length of skin about 30 inches; wing, 23; tail, 12 inches.

HAB. The entire territory of the United States—rare in New England. Wisconsin, (Dr. Hoy,) Oregon, (U. S. Ex. Exp. Vincennes.) New Mexico, (Dr. Henry.) California, (Dr. Gambel.) Spec. in Mus. Acad. Philada.

OBS. This species is abundant in the Southern, and of quite frequent occurrence in the Middle States of the Union; but it rarely visits the north-eastern, or on the Atlantic, is seldom met with north of New Jersey. In the southern part of the State of Delaware, and in Maryland, it is very abundant, migrating farther south in the winter. It subsists entirely on dead animals, which it devours in every stage of decomposition or putridity.

A South American species, long considered as identical with the present bird, is now well ascertained to be distinct, and is the *Vultur jota*. Molina.

This name has been erroneously applied to the Carrion Crow or Black Vulture of the United States. The South American species is the smaller, is more slender in all its members, and all the specimens that we have seen have been of a more uniform clear black colour.

2. *CATHARTES ATRATUS*. (Bartram.) The Carrion Crow. The Black Vulture.

VULTUR ATRATUS. Bartram Travels, p. 289. (1791.)

VULTUR URUBU. Vieill. Ois. d'Am. Sept., p. 53. pl. 2. (1807.)

Wilson Am. Orn. IX. pl. 75, fig. 2. Aud. B. of Am. pl. 106.

Plumage commencing higher on the back of the neck than on its sides or in front, and there consisting of short feathers. Head and naked portion of the neck, warted or corrugated, and thinly covered with short hair-like feathers, bill rather long, nostrils large, and communicating with each other; tail, even; legs, rather long.

Entire plumage, deep uniform black, with a bluish gloss; under surface of primaries nearly white.

Total length (of skin) about 23 inches, wing $16\frac{1}{2}$, tail $8\frac{1}{2}$ inches.

HAB. Southern States, Texas (Audubon), California, Oregon (U. S. Ex. Exp. Vincennes). Spec. in Mus. Acad. Philada.

OBS. Abundant in the Southern States, and gregarious, congregating in large numbers in the cities, where they are of service in the destruction of all descriptions of rejected or waste animal matter.

The South American bird usually regarded as identical with this bird, is the *Vultur brasiliensis*. Ray. It is considerably smaller, and otherwise quite distinct.

3. *CATHARTES CALIFORNIANUS*. (Shaw.) The Californian Vulture.

VULTUR CALIFORNIANUS. Shaw, Nat. Misc. IX. p. 1, pl. 301. (1797.)

VULTUR COLUMBIANUS. Ord. Guthries' Geog. II. p. 315. (1815.)

CATHARTES VULTURINUS. Temm. Pl. col. I. pl. 31. (1820.)

Aud. B. of Am. pl. 411. Gray Gen. of B. pl. 2. Licht. Trans. Berlin Acad. 1838, pl. 1.

Size, large. Plumage commencing on the neck near the body, with a ruff of long, lanceolate feathers, which are continued on the breast. Head and neck bare, or with a few short feathers on the vertex, and at the base of the upper mandible; bill rather long, nostrils small, communicating with each other; wings long, primaries pointed; tail long, slightly rounded; tarsi and feet very strong.

Entire plumage black, many feathers narrowly tipped with brown, secondary quills with a grayish tinge, greater coverts tipped with white, which forms a transverse bar on the wing. Bill, yellowish white. Iris, carmine. Head and neck, in living bird, orange yellow. (Gambel.)

Total length (of skin) about 45 inches, wing 31, tail 15 inches.

HAB. California, Oregon. Spec. in Mus. Acad., Philada.

OBS. This large Vulture is inferior only in this family to the Condor of South America. It is restricted to the countries west of the Rocky mountains, where in the vicinity of rivers it is occasionally abundant, living principally on dead fishes. It appears to be, however, more cautious and timid in its habits than the other birds of this group, and constructs its nest in the remote recesses of the mountains.

B.

SPECIES PROBABLY OCCURRING IN THE UNITED STATES.

1. CATHARTES BURROVIANUS. Cassin, Proc. Acad. Philada. II. p. 212, (1845.)
Burrough's Vulture.

Resembling *C. aura*, but much smaller. Plumage on the neck ascending behind, as in *C. auratus*; bill, rather short; tail, rounded; tarsi, rather long. Entire plumage, deep uniform black, without brown edgings.

Total length of prepared specimen, from tip of bill to end of tail, about 22 inches, wing 18, tail $8\frac{1}{2}$ inches.

HAB. Mexico, Vera Cruz (Dr. Burrough), Mazatlan (Dr. Gambel). Spec. in Mus. Acad., Philada.

OBS. This is the smallest of all known Vultures, and though strictly of the same genus as *C. aura*, may readily be recognized by its small size. It is very probably to be found in California, and the late Dr. Gambel thought that he had seen it in that country, and at Mazatlan. (Jour. Acad. Philada. I. p. 26, quarto.)

II. GENUS SARCORAMPHUS. DUMERIL ANAL. p. 32, (1806.)

GYPAGUS. VIEILL, ANAL. p. 21, (1816.)

HEAD and neck naked, the former with an elevated fleshy caruncle. In all other characters much resembling *Cathartes*.

2. SARCORAMPHUS SACER. (Bartram.) The Sacred Vulture.

VULTUR SACRA. Bartram, Travels in Florida, p. 150, (1791.)

Original description.—“The bill is long, and straight almost to the point, where it is hooked or bent suddenly down, and sharp; the head and neck bare of feathers nearly down to the stomach, when the feathers begin to cover the skin, and soon become long and of a soft texture, forming a ruff or tippet, in which the bird, by contracting his neck, can hide that as well as his head; the bare skin on the neck appears loose and wrinkled, which is of a bright yellow colour, intermixed with coral red; the hinder part of the neck is nearly covered with short stiff hair; and the skin of this part of the neck is of a dun purple colour, gradually becoming red as it approaches the yellow of the sides and forepart. The crown of the head is red; there are lobed lappets of a reddish orange colour, which lay on the base of the upper mandible. The plumage of the bird is generally white or cream colour, except the quill feathers of the wings

and two or three rows of the coverts, which are beautiful dark brown; the tail, which is rather large and *white*, is tipped with this dark brown or black; the legs and feet of a clear white; the eye is encircled with a gold coloured iris, the pupil black." Bartram, as above, p. 150, 151.

OBS. The identification of the bird here described, may be considered as one of the most important services to be performed in North American Ornithology. Its occurrence has never been noticed since the time of the accurate and veracious naturalist who first described it, and his careful description above quoted seems to clearly indicate it to be a species entirely unknown. The white tail especially is characteristic, and establishes a clear distinction from any other known species. It is related evidently to the King Vulture, (*S. papa*), but that species has a black tail, and in case of mistake or misprint in Bartram's description, it may be presumed at any rate to relate to an occurrence of that species within the United States. There is no more inviting nor more singular problem in North American Ornithology.

C.

SPECIES, THE OCCURRENCE OF WHICH IN THE UNITED STATES IS DOUBTFUL.

1. SARCORAMPHUS GRYPHUS. (Linn.) The Condor.

Bonap. Am. Orn. IV. pl. 22. Temm. pl. col. 133, 408, 464. Zool. Voy. Bonité, Birds, pl. 2, (Paris, 1841.)

Size, large. Head, neck, and large space on the breast, bare. Plumage, black, with a white space on the wing; neck, with a collar or ruff of white downy feathers; plumage of the back, the quills and tail frequently with a gray tinge. Head above with a large caruncle or comb, and others on the sides of the head and neck.

Total length of skin, about 4 feet, wing about 2 feet 6 inches, tail about 15 inches.

HAB. South America.

OBS. The famous Condor of the Andes, though it has been admitted as a North American bird into the works of Bonaparte and Nuttall, cannot at present, in our opinion, be so regarded. The description in the History of the Expedition of Lewis and Clarke, which was supposed to relate to this bird, and has been the sole authority for its introduction by the authors just mentioned, very probably applies to the Californian Vulture. No other travellers have seen the Condor, either at the localities mentioned by Lewis and Clarke, or elsewhere in North America. It is common in the western parts of South America. The most complete descriptions with which we are acquainted are by Humboldt, in Zoological Observations, I. p. 26, (Recueil d'Observations de Zoologie et d'Anatomic comparée Paris, 1811, quarto,) and by Darwin in

Zoology of the Voyage of the Beagle, Birds, p. 3, (London, 1841,) and by the same author in Voyage of a Naturalist, I. p. 234, 238, (American edition, New York, 1846, duodecimo.)

2. *SARCORAMRHUS PAPA*. (Linn.) The King Vulture.

Spix. Av. Bras. pl. 1. Buff. Pl. Enl. 428. Vieill. Gal. pl. 3.

Plumage on the neck, dusky cinereous; wings and tail, glossy black; all other parts, fine pale fulvous. Head and upper part of neck naked, the former with an elevated and conspicuous caruncle arising from the cere.

Total length of skin about 28 inches, wing 18, tail about 9 inches.

HAB. South and Central America. Mexico.

OBS. The King Vulture is the most handsome bird of its family. Though admitted by Nuttall as a bird of the United States (Manuel, I. p. 40, Boston, 1840,) no instance is recorded, or has otherwise come to our knowledge, of its having been observed north of Mexico. It is not improbable, however, that it may yet be found in Texas or in California, or possibly in Florida. It is described by Hernandez as an inhabitant of Mexico, in his "New History of the Plants, Animals, and Minerals of Mexico," p. 319, (Nova, plantarum, animalium et mineralium Mexicanorum, Historia, Rome, 1651, folio,) and has found a place in the works of all authors on general Ornithology, and been noticed by many travellers.

The above comprise all the Vultures which have been hitherto known or supposed to inhabit America, north of Mexico. There are three other species which appear to be peculiar to South America and the islands of West Indies, (particularly the more southern of them,) all of which more or less intimately resemble our species of the North. They are *Cathartes jota* (Molina), described in Geog. Nat. and Civil Hist. of Chili, American edition, I. p. 185, (Middletown Conn. 1808, octavo,) *Cathartes Brasiliensis*, Bonaparte Consp. Av. p. 9, and *Cathartes urbicola*, Des Murs Rev. and Mag. de Zool. April, 1853. The latter is a large and very remarkable species which has only recently been ascertained to frequent the cities of several of the West Indies.

Nearly all of the American Vultures are remarkable for a disposition manifested, in a greater or less degree, to resort to cities, or even more isolated abodes of men, for the purpose of procuring food. In the southern cities of the United States, the Black Vulture congregates in large numbers; its relative of South America (*Cathartes Brasiliensis*) possesses the same habit, and is exceedingly abundant in the cities of the countries that it inhabits. Even the gigantic Condor does not hesitate to make its appearance in the vicinity of villages or dwellings in the western countries of South America for the

same purpose. In this respect these birds resemble the most common European bird of their family which inhabits southern Europe, and also Asia and northern Africa; the *Neophron percnopterus* or Egyptian Vulture. The latter is, however, very different in colour, being nearly white when adult, and *clean*, which is an important consideration in a bird of habitually filthy habits.

Travellers have represented the male of the Condor as larger and as having more handsome plumage than the female. We hope to be excused for here asking attention to this point, should opportunity occur to any of our readers. It is the only known or supposed instance in the order of Rapacious Birds, of the male being the larger, and, if true, of course establishes an exception hitherto not recognized by naturalists. In these birds, and especially in the Falcons and Eagles, the difference in the size of the sexes of the same species is often very remarkable, but the larger is invariably the female.

Further experiments and observations by persons having suitable opportunities and facilities are very desirable for the purpose of ascertaining the degree of development of the senses of sight and smell in the Vultures. Eminent authors have maintained quite opposite views on this subject, some attributing the fact that they perceive objects suitable for their food from a distance, to the acuteness of their sight and others to their power of smelling. This is yet an open question, though there is a very considerable amount of evidence on each side, and may be regarded as presenting an interesting field for further investigation.



On Stone by W. E. Hitchcock

Kirtland's Owl

See also Vol. I

Nyctale Kirtlandi (Hv.)

1 in From 10" 4" over 1 1/2 inches Tall

NYCTALE KIRTLANDII.—(HOY.)

KIRTLAND'S OWL.

PLATE XI.—ADULT MALE.

HAVING in the eastern portion of the United States no traditions nor architectural remains which date beyond the first settlement of the white man, our people are but little prone to many of the superstitions which have prevailed in the old world. In the absence of the ruined monastery or crumbling abbey, of the ivy-covered baronial castle and haunted tower, local and legendary superstitions especially, have found no considerable nor permanent place in the popular mind.

Some reliance in the influence of the moon, and a small degree of attention to the aspect of the sign of the zodiac according to the time-honored frontispiece in the almanac, both materially lacking in the important requisite of full and trusting faith, are very nearly the only mysteries which can be regarded as having acquired a practical adoption in any appreciable degree. Others, as the witchcraft of former and the Spiritualism of latter times, as in other countries, have temporarily assumed aspects of more or less importance, but have either disappeared, or, awaiting the certain test of Christian enlightenment and unprejudiced examination, have taken the form of religious faith, and are held in conscientious veneration. An occasional exception may be found, too, in the local transplanting of an European, or perhaps of an African tradition, but many superstitions of the old world are almost absolutely unknown; the evil Banshee, the gentler Brownie, Puck and Oberon, Mab and Titania have no local habitation, though well beloved as beautiful accessories in the immortal productions of the poets, or as told by an humble mother to her children in tales of remembrance of her native land.

In the higher order of legends—in those which record facts or dim histories of exceeding antiquity, or in which are embalmed the deeds of the remote hero, though even more faded than his features on the mouldering

wall or the faded marble—young America pleads her youth. But not without product—and as that which has been shall be again, as legends and traditions like to those of other nations will very probably be amongst the results of American mind, there is one American name, perhaps as yet one only, which may become mythical or even now is. When thousands of years shall have rolled away, and the annals of the present age shall be known only to the scholar and the antiquary of those times in precious scraps and fragments, the adjusting of which shall require the skilfulness of learning, some future Lepsius or Layard may recognise in a wise Minos or in a just Nemesis, the American Washington.

The Republic of the United States has acquired its position as a nation, and in fact has existed only in an age of enlightenment, and the universal attention to education and the diffusion of general knowledge which happily has ever prevailed in a degree not exceeded in any country, has necessarily prevented in a great measure the forming of orally transmitted histories or of legendary fables, and there being no ruins of buildings nor other evidences of the decay of past ages, our people do not associate with ideas of desolation, animals which might have found suitable habitations in such localities, nor have they attributed traditional associations or characters.

We have no birds of ill omen, and even the long-defamed Owl has escaped his usual reputation; not that he is regarded with favor, rather the reverse; but for other reason than attributed connexion with supernatural agents; nor is his appearance in the neighborhood of the farm-house or the settler's cabin regarded as at all ominous, except of immediate danger to whatever of the domestic poultry may have attracted his attention, or in any degree foreboding, unless of his own abrupt demise in case he happens to be observed by the proprietor, having at hand his trusty rifle or fowling-piece. The owl takes the greater risk in such an adventure.

On account, in some measure, of their peculiar forms, particularly their large heads and staring eyes, their nocturnal habits, and their habitually resorting in the day-time to secluded haunts in the forest or other little-frequented localities, no animals have been more invariably regarded as of evil portent than owls. And in this character they have found a place in the literature, and especially the poetry, of nearly all nations ancient and modern. The Latin writers seldom fail to mention the appearance of the owl among the omens and prodigies which they frequently enumerate as having preceded disasters to the state or to distinguished personages. Pliny

in his *Natural History*, gravely devotes a chapter to Inauspicious Birds, and gives the owl a post of distinction in this manner: "The owl, a dismal bird, and very much dreaded in public auguries, inhabits deserts which are not only desolate, but dreary and inaccessible: it is a monster of night, nor does it possess any voice but a groan. Thus, when it is seen in towns or in daylight, it is an omen to be dreaded." Book x., chapter 12. The poets give him the same reputation, but perhaps only in the legitimate exercise of their art. The poet is privileged in the entire domain of nature, and Virgil and Shakspeare have forever commemorated, though somewhat infamously, the Owl. The former alludes to it as one of numerous precursors of the death of Dido:

"Solaque culminibus ferali carmine bubo
 Sæpe queri, et longas in fletum ducere voces."
 "Whilst lonely on the roof, night's bird prolongs
 The notes of woe, and shrieks funereal songs."

Shakspeare uses the Owl in the same capacity of direful portent. Thus *Casca*, in allusion to omens preceding the death of *Cæsar*:

"And yesterday, the bird of night did sit
 Even at noon-day upon the market-place
 Hooting and shrieking:"

and in *Macbeth* he introduces its cry as an accompaniment of the murder of *Duncan*:

"Hark! Peace! It was the owl that shrieked,
 The fatal bellman, which giv'st the stern'st good-night.
 He is about it:"

and again in *Henry the Sixth*:

"The owl shriek'd at thy birth; an evil sign;
 The night-crow cried, aboding luckless time,
 Dogs howl'd, and hideous tempests shook down trees."

Shakspeare has various other passages of much the same tenor, and so have many other poets of the English and other languages; but, as we can say truly with *Cowper* (in *Task*):

"The jay, the pie, and e'en the boding owl,
 That hails the rising moon, have charms for us,"

we have no intention at all of making out a strong case of bad reputation against him, even from the poets. We ought to say, though, that he has borne this reputation much more recently than the time of Pliny, and in some countries of the old world has scarcely yet attained a character of entire respectability. There might be a difficulty, however, in deciding which is the more remarkable, the things said of him, or the gravity of the sayer. A writer, cited in Brand's Popular Antiquities, says to the point: "In the year 1542, at Herbigopolis or Wirtzburg, in Franconia, this unlucky bird by his screeching songs affrighted the citizens a long time together, and immediately followed a great plague, war, and other calamities. About twenty years ago, I did observe that in the house where I lodged, an Owl groaning in the window presaged the death of two eminent persons who died there shortly after." Another, bringing the matter to a more general bearing, says: "If an owl, which is reckoned a most abominable and unlucky bird, send forth its hoarse and dismal voice, it is an omen of the approach of something: that some dire calamity and some great misfortune is near at hand." And amongst many similar stories, it is related by an old author, that when a Duke of Cleves was suffering with the disease of which he afterwards died, an Owl was seen and heard frequently upon the palace of Cleves in the day-time, and could scarcely be driven away. Very wonderful, but not calculated for the present meridian, and happily rather out of date generally. It would scarcely suit the citizens of our frontier States to regard in any such aspect the nightly serenades of the Great Horned Owl, though performed in a style entirely appropriate.

Other nations, and some more ancient than the Romans, also regarded the Owl with various degrees of superstition. In Egypt, at one period, an image of an Owl transmitted by the supreme authority to a subject, was an intimation in established form, that the latter would particularly oblige his sovereign by immediately committing suicide. With which civil invitation, compliance, at earliest convenience, appears to have been necessary, not entirely as a matter of mere politeness, but to save himself from aspersions as a man of honor and a gentleman. An instance is related by Diodorus Siculus, in which a person placed in such a dilemma and manifesting some repugnance and uncourtly backwardness, was put to death by one of his parents to save their house from disgrace.

But the people of the present day have been favored to live in an age characterized in all Christian countries by the diffusion of truth and the

progress of intellectual cultivation, and in which, as a peculiar feature, the physical sciences especially have tended to dispel the mists of ages. In accordance with the spirit of it, modern writers rarely resort to the adoption, even in poetic composition, of ungrounded popular errors. Thus, with no such implication, Coleridge, in *Christabel*, introduces the Owl in an opening chorus :

"'Tis the middle of the night by the castle-clock,
And the owls have awakened the crowing cock.
Tu-whit! — tu-whoo!
And hark again! the crowing cock
How drowsily he crew."

And beautiful too is the allusion to the Owl by Longfellow, in *Hyperion* :
"For the owl is a grave bird ; a monk who chants midnight mass in the great temple of Nature."

Kirtland's Owl, which we present to our readers in the plate now before us, is one of the most recent additions to the Ornithological Fauna of this country, and was first brought to notice by Philo R. Hoy, M. D., an eminent naturalist and physician of Racine, Wisconsin, who has ascertained its occurrence, and has succeeded in obtaining several specimens in the neighborhood of that city.

It appears, however, to be by no means a common species, though having been observed in the season of incubation, as well as in the winter, it may be presumed to be a constant resident, and further investigation may bring to light full details of its history. It belongs to a group composed of several species of small owls, found in the northern regions of both continents, the most common of which, in this country, is the little Acadian Owl (*Nyctale acadica*), a curious and rather handsome little species not very well known in the rural districts, but sometimes occurring, and also occasionally captured, in the cities. It is the least of the owls of the Atlantic States. Another species is known as Tengmalm's Owl (*N. Tengmalmii*), which inhabits the higher northern latitudes of America and Europe.

Like the other small species of its family, the present Owl probably subsists on the smaller birds and quadrupeds and on insects. The last form no inconsiderable portion of the food of the smaller Owls. We have repeatedly found the remains of insects in the stomachs of several species ; and in 1851, during the period of the appearance of the Seventeen-year Locust (*Cicada septemdecim*) in the neighborhood of Philadelphia, we enjoyed an oppor-

tunity, in company with several members of the Academy of Natural Sciences of this city, of observing the common Red Owl (*Ephialtes asio*) while engaged in feeding on insects of that remarkable species. It captured them principally in an apple-tree in which it was first noticed, but occasionally pursued its object to the ground, and with a degree of adroitness and avidity which fully evinced that it had been accustomed to similar occupation.

Dr. Hoy's description of the species now before us was first published in the Proceedings of the Philadelphia Academy, VI. p. 211, (Dec. 1852,) from which we make the following extract:

"But two specimens of this bird have been taken, to my knowledge; the first was captured in October 1851, and kept until winter, when it made its escape; the second, that from which the above description was taken, flew into an open shop, July 1852. It is strictly nocturnal, utters a low tremulous note, and is an active and efficient mouser."

We have been informed by Dr. Hoy that during the past summer (1853,) he had succeeded in obtaining another specimen which proved to be a female. It is slightly larger than the male, but similar in all other respects.

The figures in our plate represent the male bird, and are about two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS NYCTALE. Brehm, Handb. Nat. Vog. Deutschlands, p. 111, (1831.)

Size, small. Bill rather weak and almost concealed by projecting plumes at its base, strongly curved and sharp. Wings moderate, rounded, with the third and fourth quills nearly equal and longest; tail moderate, tarsi short, and with the toes densely clothed with hair-like feathers; claws rather long, slender, and very sharp. Type N. *Tengmalmii* (Gmelin).

NYCTALE KIRTLANDII. Hoy, Proc. Acad. Nat. Sci., Philada., VI. p. 210, (Dec., 1852.)

FORM. Small, but compact, wing with the fourth quill slightly longest, tarsi and toes fully feathered, claws slender, sharp.

Dimensions of a skin from Dr. Hoy. Male, total length from tip of bill to end of tail, about 7 inches; wing, $5\frac{1}{4}$; tail, 3 inches. "Extent of wings, 16 inches," (Dr. Hoy.) Female, rather larger.

COLORS. MALE. Head and upper portion of breast, and entire upper parts dark chocolate-brown; front and eye-brows white, and a line of the same color extending downwards from the base of the lower mandible; ear

feathers behind the eye darkest; primaries with white spots on their outer margins forming three irregular bars, and with circular spots of white on their inner webs; tail rather darker than the back, narrowly tipped with white, and having two bands composed of spots of white.

Entire under parts of the body, tarsi and toes, reddish ochre-yellow; bill and claws black, iris-yellow.

HAB. State of Wisconsin. Spec. in Mus. Acad. Philada., and in Dr. Hoy's coll. Racine, Wisconsin.

OBS. This little Owl is strictly congeneric with *Nyctale Harrisii* Cassin. Proc. Philada. Acad. IV. p. 157, (Feb. 1849,) and Journal of the same society, Quarto II., plate V., but different in size and color. *N. Harrisii* is the same as *Ciccaba gisella* Bonaparte, Cons. Av. p. 44, (1850.)

The present bird also resembles, in some degree, *Strix frontalis* Lichtenstein, described in a Fauna of California, in Transactions of the Berlin Academy, 1838, p. 430.

EMBERNAGRA BLANDINGIANA.—(GAMBEL.)

BLANDING'S FINCH.

PLATE XII.—ADULT MALE.

BLANDING'S Finch was discovered in the Rocky mountains by Dr. Gambel, and named by him in honor of one of the most universally respected of American naturalists and friends of science, William Blanding, M. D., formerly a resident of Philadelphia, but now of Providence, Rhode Island. During many years of previous residence in South Carolina, Dr. Blanding omitted no opportunity of facilitating by observation and active exertion in contributing to collections, the advancement of the interests of Natural Science in all its departments, and he has been deservedly complimented by naturalists whose studies he has been the means of promoting, and with whom personally he has for many years maintained relations of the most friendly character. Many of the cultivators of Natural History in America owe much to the advice and encouragement of Dr. Blanding, and among such we gratefully include ourselves.

This bird belongs to a group of which several species are known to inhabit Mexico and South America, and of which one other species is a summer visitor to Texas. All of them are birds of handsome and even elegant general appearance and color of plumage, and partake much of the inoffensive habits of other birds of the family to which they belong, and which includes the Finches and Sparrows. Subsisting for the greater part on seeds, much of their time is passed on the ground, or in undergrowths of shrubbery in the immediate vicinity of fields and meadows, or other grass-bearing localities.

We regard the present species as the handsomest Bird of the family of Sparrows yet discovered in the United States, and regret that it is not in our power to lay before our readers an account of it at all full or satisfactory, little having been placed on record, or having otherwise come to our knowledge, beyond the fact that it inhabits sparingly the Rocky mountains,



Painted by W. E. H. H. H.

Phoenicurus Phoeniceus

W. E. H. H.

Phoenicurus Phoeniceus

W. E. H. H.

California and northern Texas. It is probably one of the many species which migrate in summer to those countries from Mexico, and even further southward, as is the case with the greater part of the numerous species of birds which are summer-residents in the eastern portion of this continent. Not more than three specimens of this bird have been brought home in the many extensive collections made by the various naturalists who have visited the countries where it is found, from which we must necessarily infer at present that it is one of the rarest of the birds of California and the Rocky mountains, though more abundant in Texas.

From Dr. Gambel's paper containing his description of this bird, published in the Proceedings of the Academy of Natural Sciences of Philadelphia, I. p. 260, (April 1843,) and subsequently in the Journal of the same society, I. p. 51 (Quarto), we extract the following:

"Of this new and singularly marked species, I procured a single specimen only, in September, on the bank of a small stream in the Rocky mountains, about half-way between New Mexico and the Colorado of the West. It kept in low bushes, in company with *Fringilla guttata*, and *F. graminea*, occasionally uttering a single chirp. The throat and breast of this species very much resemble those of *Fringilla Pennsylvanica*."

Dr. Woodhouse procured, also, one specimen, only, during Capt. Sitgreaves' Expedition to the Zuñi, and Colorado rivers, respecting which he observes: "Whilst encamped on the Rio Salado, near San Antonio, Texas, in the beginning of April, I procured a solitary specimen of this beautiful and interesting bird. Its favorite haunts seemed to be the low bushes in the vicinity of the creek; this was the only one that I observed east of the Rio Grande. In the Zuni mountain, and in the vicinity of the *pueblo* of Zuñi, it was quite abundant." (Report of an Expedition down the Zuñi and Colorado rivers, by Capt. L. Sitgreaves, of the Topographical Engineer Corps, U. S. Army, Washington, 1853. Zoology, p. 85.)

It was also seen by Dr. Heermann, in California.

Our figure is that of a male, and is about two-thirds of the natural size.

The plant represented, is *Nuttallia digitata*, a native of California.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS EMBERNAGRA. Lesson Traité d'Orn, p. 465, (1851.)

Bill, moderate, conic; wings, short, rounded, usually with the fifth and

sixth quills slightly longest; tail, lengthened, rounded at the tip; tarsi and toes, lengthened, strong; claws, short, curved. A genus of birds related to *Zonotrichia*, and containing several species, all of which are American.

EMBERNAGRA BLANDINGIANA. (Gambel.)

FRINGILLA BLANDINGIANA. Gamb., Proc. Acad. Philada. I. p. 260, (April, 1843.)

FRINGILLA CHLORURA. Aud. Orn. Biog. V. p. 336?

FORM. Rather robust, bill strong, wing short; second, third and fourth quills nearly equal, third slightly longest, tail rather long, legs and feet strong, claws well developed, that on the hind toe large.

DIMENSIONS. ADULT. Total length (of skin) from tip of bill to end of tail, about 7 inches; wing, $3\frac{1}{8}$; tail, $3\frac{1}{4}$ inches.

COLORS. Head, above, fine rufous chestnut. All other upper parts, yellowish green, tinged with ashy. Throat, white, which color is bordered on each side by a line of ashy black. Sides of the neck, the breast and sides of the body, and flanks, light cinereous, tinged with ochre on the latter and under tail coverts. Middle of the lower part of breast, and of the abdomen, white. Wing, at its flexure and under wing coverts, yellow. Quills and tail-feathers, light greenish yellow on their outer webs.

HAB. California and Texas. Spec. in Mus. Acad. Philada., and Nat. Mus. Washington.

OBS. This species resembles somewhat several others which are natives of the Southern extreme of North America, though not sufficiently to be readily confounded with either of them.

The description of *Fringilla chlorura*, Aud. in Orn. Biog. V. p. 336, consists of extracts of letters from Dr. Townsend, in which a bird is described, of which he procured no specimens, but evidently like the present, in some respects, but not with sufficient precision to be determined. He represents it as "a true *Fringilla*. The head of light brownish color spotted with dusky, back varied with dusky and greenish olive, rump brownish spotted with dusky, &c." Our present bird is by no means a true *Fringilla*, nor does the description otherwise apply to it with such degree of probability as to be relied on.



Or. Stone by Wm. F. Holbrook

The American House Finch

Des. O. White del.

Lith. Printed & Col'd by J. T. Bowen, Phil.

Carpodacus familiaris (Mill.)

CARPODACUS FAMILIARIS.—M'CALL.

THE AMERICAN HOUSE-FINCH.

PLATE XIII.—MALE AND FEMALE.

WHEN the winter of our northern climes has abated its rigors, and the season of brighter skies and returning flowers approaches, none of its early tokens are welcomed with more pleasing associations, than the reappearance of those familiar birds, which, like the Wren, the Blue Bird, and the Pewee Flycatcher, come pleasantly into the immediate vicinity of our dwellings, to select accommodations for the construction of their nests, and for rearing their young. They share the hospitality of the splendid mansion and the humble cottage, and are made welcome alike in each.

Of birds of this description, no species is more remarkable for its confiding disposition, than the little Finch now before the reader, and which is a native of the western countries of North America. It not only approaches the abodes of men without hesitation, and occupies habitually the suitable parts of houses and other buildings, but resorts in large numbers to such uncongenial localities as one might think them, as towns and cities. In several of those in New Mexico, and California, this bird is very abundant, and is a great favorite.

Several species of the same genus to which the present belongs, all of which present considerable similarity, inhabit northern countries of this continent, and others are found in the same latitudes of the old world. The males of all the species are clothed in plumage of fine crimson, or of purple of various and delicate shades, when they have attained maturity. The females are however of much plainer appearance, and generally present little similarity of color to their more gay consorts. The Purple Finch (*Carpodacus purpureus*) is the best-known American bird of this group. It is common as a winter visitor in the middle and southern States, and at that season its habits are such only as are adapted to a roving life in the woods. It retires in the spring to the northern states, and the mountains of

Pennsylvania, and is there regarded with much favor on account of the beauty of its plumage and its agreeable song.

A species of the old world (*C. erythrinus*), which is one of several that are natives of northern Russia, of Siberia and Kamtschatka, is very similar in its general appearance to the Purple Finch, and, like it too, it has an extensive range of migration, appearing throughout European and Asiatic Russia, and the northern countries of India. Of the Asiatic species, one is remarkable for having been discovered on Mount Sinai, by an European naturalist, and in reference to that fact, has been named by him the Sinai Finch (*Carpodacus sinaiticus*.)

Our present bird appears to be the species alluded to by Dr. Gambel as the crimson-fronted Finch, *Erythropsiza frontalis* (Say), in the Journal of the Philadelphia Academy, Quarto, I. p. 53, in the following passage: "This handsome songster we first observed in New Mexico, particularly about Sante Fé, where it is an abundant and familiar resident, keeping about the *corrals* and gardens, and building its nest under the portals and sheds of the houses. In July the young were ready to fly, which must have been a second brood, or else they begin to lay much later than in California. Under a long shed or *portal*, in the Plaza or Square of Sante Fé, they had a great many nests; and the old birds would sometimes fly down about our feet while sitting at the doors, to pick up crumbs, &c. for their young.

"In California, it is also an extremely abundant and familiar resident, and is called by the inhabitants *Buriones*. During winter they assemble in flocks, frequenting the bushy plains and hill-sides, hedges, vineyards and gardens, living on the various kinds of seeds which are so abundant, and also sometimes doing considerable damage among the grapes. Early in March they commence pairing, and soon are busy building their nests; placing entire confidence in man (which is but too often misplaced) they persist in building about the houses; on the projecting planks under the portals, under the eaves, in sheds, boxes or in any nook they can find. I once found a nest in a small box of seeds which had been stuck up over a door. They will also build on the horizontal branch of a tree in the garden, and a great many nests are made in the willow hedges of the vineyards, but they prefer by far the rafters under the sheds and houses, repaying the inmates for the privilege, with their most melodious song, which is continued during summer, from the roof near the nest. The nest is made of small sticks, or stems of weeds, willow catkins and down of the willow, and lined with horse-hair. They usually lay five eggs, sometimes of a plain bluish white color

only, but generally having a few scattering streaks and specks of dark brown on the larger end. Some nests are made principally of feathers, cotton or wool, with a few sticks and dried grass, and lined with horse-hair. Frequently only four eggs are found in the nest, and they often have a very few specks or streaks on one side only.

“It would be impossible, with words, to describe the song of this western Orpheus; and although California contains many song-birds, among others the Mocking-Bird, yet there is none more exhilarating to the feelings, or melodious and tender to the ear, than the song of this Finch.”

This bird was first described satisfactorily as a distinct species, by Col. M'Call, in the Proceedings of the Philadelphia Academy, VI. p. 61, (April 1852.) In a previous paper in the same periodical, V. p. 219 (June 1851) he thus alludes to it:

“I found this charming little Finch abundant at Sante Fé, where it commenced nesting in March, although the weather was still wintry, and so continued, with frequent snow-storms, for more than a month. Notwithstanding this, the song of the male failed not to cheer his mate during incubation, with the the liveliest melody. The notes often reminded me of the soft trill of the house-wren, and as often of the clear warble of the canary. The males of the last year, though mated and apparently equally happy and quite as assiduous as their seniors, were not yet in full plumage, having little or nothing of the red colors that mark the adult birds.

“The nests, which were stuck into every cranny about the eaves and porticoes of the houses throughout the town, were variously composed of dry grass, fine roots, horse-hair, long pieces of cotton twine, or strips of old calico; in fine, of countless odds and ends, that were picked up about the yards;—these were curiously and firmly interwoven, so as to make a warm and comfortable abode for the new-comers. Eggs, four or five, pale blue, slightly marked on the larger end. The young were able to fly by the middle or latter part of April. A second brood, and in some cases, I believe a third was raised during the summer, as not a few of them continue to incubate until some time in the month of August. Before the latter part of September, however, nearly all of them had disappeared from about Santa Fé.”

For the following additional account of this species, prepared expressly for the present article, we are also indebted to Col. M'Call:

“Whilst residing in New Mexico. I always remarked a gentle amity in the

character of this lively little songster which failed not to bespeak for him the kindly regard of all with whom he made his abode, whether the wealthy proprietor of the manor-house, or the humble *peon*, whose miserable hut stood aloof from the mansion. For, the same cheerful melody that soothed the noontide of the former while idly swinging in his hammock, welcomed the appearance of the latter as he came forth at the dawn of day to resume his toil; the same confiding familiarity was observable in his approach to both, and the same merry pranks were played, whether feeding on the bounty of the one, or gleanings a more scanty meal near the ill-furnished table of the other. It was this pleasing trait in his character which prompted me in the choice of his name.

His disposition also towards other birds, appeared to be mild and peaceful, as I had many opportunities to observe. I will mention one instance: In the piazza of the house I occupied, quite a colony of these birds had their nests: here the work of building and incubation had gone on prosperously for several weeks, although the weather at times was stormy and cold, and ere the genial warmth of spring was fairly felt, the colony might have been said to be fully established. As the season advanced and birds of less hardy nature began to arrive from the south, a pair of Barn-Swallows (*H. rufa*) made their appearance, and forthwith entered the territory of the Finches. And here they at once, very unceremoniously, began to erect their domicile. This act of aggression would have been fiercely resented by most birds, and violent measures would have been promptly resorted to, to eject the intruders. The conduct of the little finches was quite different: at first they stood aloof and seemed to regard the strangers with suspicion and distrust, rather than enmity. In the mean time the swallows went quietly to work, without showing any inclination to intermeddle; and in a day or two [their mud-walls all the time rapidly advancing] they gained the confidence of their neighbors, and finally completed their work unmolested. Indeed, a perfect harmony was established between the parties, which I never saw interrupted by a single quarrel during the time they remained my tenants.

This incident, and I would mention others were it necessary, illustrates the character of this species in strong contrast with that of its relative, the Purple-Finch, (*C. purpureus*), which both Wilson and Audubon agree in representing, from personal observation, as quarrelsome, tyrannical and domineering in the extreme. This species may, moreover, be considered as a more southern bird than the Purple-Finch, its northern range probably not

extending much beyond the limits of New Mexico, on the eastern slope of the Rocky mountains; while that of the other stretches to the Fur countries.

On the western slope, it is common throughout California, but not in Oregon. At the Missions of San Diego and San Gabriel it nested in the hedge-rows, as well as in the buildings. I often saw it in numbers on the edges of the immense fields of wild mustard, a plant which, introduced by the early Spanish missionaries, now overruns whole districts of that country, and in size and vigor of growth is almost arborescent; but whether it nested in these thickets or not, I did not ascertain. Yet I found the nests of the Red-winged Black-bird (*A. phœniceus*) in numbers, placed at the distance of 6 or 8 feet from the ground, in the branches of the wild mustard.

The food of this species, like its congeners, consists at different seasons of buds, fruits, the seeds of various grasses and wild plants, which it often plucks from the capsules while hanging inverted or sidewise on the bending stalk. Insects are also eaten, I believe, at all seasons. But in its half-domesticated condition at Santa Fé, nothing edible seemed to be amiss."

This species appears to congregate into flocks at the close of the summer season, and to adopt the wandering habits of its near relative the Purple-Finch previously alluded to in this article. They migrate at that period and during the winter to Mexico, and probably to the countries of Central America. The following notice is from Dr. Heermann's Notes on the Birds of California, (Jour. Philada. Acad. Quarto, II. p. 267,) and relates to this bird:

"Very abundant and found in large flocks in the fall season, feeding on the buds of young trees. I found this species abundant at Guaymas, where it breeds under the eaves of houses, in the branches of the small cactus plants; and one nest I discovered in a deserted woodpecker's hole, made in the body of an upright cactus, one and a half feet in diameter and about fifteen feet high, with which species of plants the country near Guaymas is covered. In California I found its nest on the dwarf oaks, composed of coarse grasses and lined with fine hair. The eggs, from four to six in number, are pale blue, marked with spots and delicate lines of black."

Dr. Woodhouse also notices this bird as abundant in New Mexico and California, (Sitgreaves' Report, Zoology, p. 88.)

The figures in our plate are about two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CARPODACUS. Kaup Nat. Syst., p. 161. (1829.)

Bill short, conical, wide at base, wings long, pointed, second and third quills longest, tail moderate or rather short, tarsi and feet strong, colors in males usually purple, size small.

CARPODACUS FAMILIARIS. M'Call, Proc. Acad. Philada. VI. p. 61. (April 1852.)

FORM. Generally similar to that of *Carpodacus purpureus* (Gm.), but smaller than either that species or *Carpodacus frontalis*. (Say.) Bill short, strong; shorter, more curved above and more turgid than that of *C. purpureus*. Wing rather long, with the first, second and third quills longest and nearly equal, secondaries truncate and emarginate, tail slightly emarginate only, not forked as in *C. purpureus*, legs, feet and claws moderate.

Dimensions of a skin from California: Total length from tip of bill to end of tail about $5\frac{1}{2}$ inches, wing $3\frac{1}{4}$, tail $2\frac{3}{4}$ inches. Col. M'Call gives the total length of the recent bird as 6 inches, 1 line and alar extent 10 inches.

COLORS. MALE. Head entirely, back, rump, superior tail-coverts, neck before and breast, brownish red, inclining to crimson, most clear and distinct on the rump, superior tail-coverts and front immediately at the base of the bill, and most obscure on the back.

Wings and tail, blackish brown, every feather having paler edgings.

Abdomen and inferior tail-coverts, white, every feather having a longitudinal stripe of brown.

Bill, pale yellowish brown, lighter on the lower mandible.

FEMALE. Without red on any part of the plumage. Body above, dark brownish, every feather having a longitudinal central stripe of a darker shade of the same color, and edged with lighter inclining to cinereous. Body beneath, sordid white, longitudinally dashed with brown.

YOUNG MALE. Much resembling the female, but with the red color appearing on the front at the base of the bill, on the neck and rump.

HAB. New Mexico and California. Spec. in Mus. Acad. Philada., and Nat. Coll. Washington.

OBS. This bird bears considerable resemblance to *Carpodacus purpureus*, but is smaller, and has occasionally been mistaken for *Carpodacus frontalis*.

The latter is a distinct and very handsome Western American species, the young of which only has been figured, but of which adult specimens have been brought home by Mr. Bell and others.

It is possible that the present is the bird alluded to by Swainson as *Fringilla purpurea*? in *Fauna Boreali Americana*, II. p. 264, and by Sir William Jardine in his edition of Wilson's *American Ornithology*, I. p. 121, (London and Edinburgh, 1832, 3 vols. octavo). The *Fringilla hæmorrhœa*, Wagler *Isis*, XXIV. p. 525, appears to be too large for this bird and more like the common *C. purpureus*.

PARUS SEPTENTRIONALIS.—HARRIS.

THE LONG-TAILED CHICKADEE.

PLATE XIV.—MALE ADULT.

THE form and general appearance of this little bird resemble those of its congeners, the Black-capped Chickadee (*P. atricapillus*) and the Carolina Chickadee (*P. carolinensis*). It is, however, larger than either of those species, and presents other characters which not only fully demonstrate it to be entitled to specific distinction, but, very probably, to possess features in its history different in some respects from any of its relatives.

Its bill is longer and more strongly developed, indicating perhaps a different race of insects as its food. Its tail is unusually long, and its entire organization stronger and larger than either of the species above mentioned, with the larger of which (*P. atricapillus*), it has erroneously been considered identical by some European authors.

This little bird is strictly a western species, and for its discovery and the first description of it, we are indebted to Edward Harris, Esq., of New Jersey, well known as one of the most eminent cultivators of Zoological science in America. It was discovered by Mr. Harris during a visit to the Upper Missouri and Yellow Stone rivers, in company with the late Mr. Audubon, and which was the last journey ever performed by the latter distinguished gentleman. The description, with some valuable observations on other species of the genus *Parus*, was first published in the Proceedings of the Philadelphia Academy, Vol. II. p. 300, (Dec. 1845,) from which we make the following extract:

“A single specimen of this bird was procured on the 26th of July on the Yellow Stone river, about thirty miles above its junction with the Missouri. It is evidently a bird of the season, with immature plumage, to which may be attributed the dullness of the black on the head and throat. On comparison of this bird with *P. carolinensis* and *P. atricapillus*, it will be perceived that, beginning with the smallest bird, the parts which are black,



Drawn by Wm. Fitzmaurice

The Northern Chickadee.

White del

Lith. Printed & Col. by J. T. Bowen Pr.

Parus septentrionalis (Harris)

decrease, and the white parts increase in size and intensity, in ascending. In *septentrionalis* the outer web of the lateral tail-feather is entirely white, except a small portion at the base, where there is a slight tinge of grey next the shaft; and the quills, secondaries and all the tail-feathers are margined more broadly and with a purer white than in the other species.

"The note of this bird is similar to that of *P. atricapillus*, but its voice more liquid and less harsh and querulous in the utterance. Bill longer and stouter."

This bird has been received at the Philadelphia Academy in a collection made by Mr. Edward M. Kern, while attached as Artist to the exploring party commanded by Col. Frémont in 1846. A very fine specimen is in the collection made by the surveying party under the command of Capt. Stansbury in the vicinity of the Great Salt Lake of Utah, and is noticed in Prof. Baird's Zoological appendix to Capt. Stansbury's Report, p. 316. (June 1852.)

Our figure is of the size of life, and the plant represented is *Microsperma Bartonoides*, a native of Western America.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS PARUS. Linnæus, Syst. Nat. I. p. 340, (1766.)

PARUS SEPTENTRIONALIS. Harris, Proc. Acad. Philada., II. p. 300, (1845.)

FORM. The largest species of typical Parus yet discovered in America. Wing with the fifth primary longest; tail, long, somewhat fan-shaped; tarsi and toes, rather strong; claws, large, flattened, sharp.

DIMENSIONS. Total length (of skins) $5\frac{1}{2}$ to 6 inches; wing, $2\frac{3}{4}$; tail, $2\frac{3}{4}$ to 3 inches.

COLORS. Head above and space on the throat, black; cheeks and sides of the neck white, the latter color nearly meeting on the back of the neck. Entire plumage above cinereous with a brownish tinge, plumage beneath only white, with touches of yellowish brown on the sides and flanks. Quills edged externally with white, outer tail-feathers edged also with the same color, which on the external feather occupies the entire outer web. Bill and feet dark.

HAB. Missouri and Utah, Rocky mountains. Spec. in Mus. Acad. Philada., and Nat. Coll. Washington.

OBS. This is the largest American species of the genus Parus (as restricted by late naturalists), and is particularly remarkable for its lengthened tail. It is a distinct and well-marked species, related to *P. atricapillus* and *P. carolinensis*, but easily distinguished from either by the characters above mentioned.

QUERQUEDULA CYANOPTERA.—VIEILL.

THE RED-BREASTED TEAL.

PLATE XV.—MALE AND FEMALE.

THIS handsomely colored and elegant little Teal, is of frequent occurrence in Western America, though first noticed as a North American species in Louisiana, by E. Pilaté, M. D., a physician and naturalist, residing at Opelousas in that State. In a communication to us accompanying one of the first specimens obtained by him and intended for the collection of the Philadelphia Academy, that gentleman mentions having occasionally seen it in company with other species of ducks, but regards its appearance as unusual in Louisiana. The specimen alluded to, which is that of a male in very fine spring plumage, is now in the collection of the society mentioned. According to Dr. Pilaté, who has paid much attention to Natural History, this bird associates with other small species of water-birds, and appears to possess, in the migrating season, similar habits, and frequents the same places of resort, though rather unusually shy and vigilant.

Our valued friends Capt. Howard Stansbury, of the U. S. Topographical Engineers, in his able Report of a Survey of the valley of the Great Salt Lake of Utah, and Prof. Spencer F. Baird, of the Smithsonian Institution, in a valuable Zoological appendix to that Report, allude to this Duck as commonly met with in Utah, and especially in the vicinity of the Great Salt Lake. It was observed frequenting the rivers and small streams. The collection brought home by Capt. Stansbury containing many objects of the highest interest and scientific value, which are described with his usual great accuracy in Prof. Baird's Appendix, is now in the National Museum at Washington city. The specimens of the present bird were obtained in the river Jordan, a stream emptying into the Lake, and so named by the settlers in that region, who are principally of the religious denomination of Mormons.

It visits South America in the course of its winter migration, and is



The Great Heron. Plate 5.

frequently to be met with in the western countries of that portion of this continent. The extensive collection in all departments of Natural History made by the party under the command of Lieut. J. M. Gilliss, of the U. S. Navy, during the performance of several years' duty in making geographical explorations and astronomical observations in Chili and other countries of South America, by order of government, and which is now a portion of the National Museum, contains numerous specimens of the bird now before us. We have seen it, in fact, in all the various collections from western South America that have recently come under our notice.

Dr. Woodhouse represents this species as very abundant in western Texas and New Mexico. (Sitgreaves' Report, Zoology, p. 103.)

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS QUERQUEDULA. Stephens, Continuation of Shaw's Zoology, XII. p. 142, (1824.)

Size small, bill rather long, straight, of nearly equal width throughout its length, lamellæ well defined, wings moderate, pointed, with the second quill usually longest, tail moderate, pointed, tarsi short, toes fully webbed.

QUERQUEDULA CYANOPTERA. (Vieill.)

ANAS CYANOPTERA. (Vieill.) Nouv. Dict., V. p. 104, (1816.)

ANAS RAFFLESII. King, Zool. Jour., IV. p. 97, (1828.)

"PTEROCYANEA CÆRULEATA. (Licht.)" Gray, Gen. of Birds, II. p. 617, (1845.)

FORM. Small; wing rather long, with the second quill distinctly longest; tertiaries and scapulars, long; two central tail-feathers pointed; bill, rather long.

DIMENSIONS. Total length (of skin), about 15 inches; wing, 8; tail, $3\frac{1}{2}$ inches.

COLORS. MALE. Top of the head, chin and under tail-coverts, brownish black; head, neck and entire under parts, deep purplish chestnut; abdomen with a large spot of brownish black; back, scapulars, rump and upper tail-coverts, brownish black, edged with dull chestnut; large space on the shoulder and lesser wing-coverts, light sky-blue, succeeded by a transverse band of white, speculum brilliant grass-green; a portion of the two first scapulars blue, and all with a central stripe of pale reddish chestnut. Bill dark; feet yellow.

FEMALE. Shoulders blue as in the male, but no trace of the chestnut color which prevails in the latter, that being replaced by a mottled yellowish and brown, very similar to the females of several other species of ducks. Head above brownish black.

HAB. Utah, California, Louisiana, Chili. Spec. in Mus. Acad. Philada., and Nat. Mus. Washington.

Obs. This very handsome species does not resemble any other species likely to be confounded with it. With other species of Teals, it has been placed in a distinct genus under the name *Pterocyanea*, Bonaparte, in which, however, we fail to perceive sufficient characters to warrant a separation from *Querquedula*.

SYNOPSIS

OF

NORTH AMERICAN BIRDS.

II. FAMILY FALCONIDÆ. THE FALCONS, HAWKS, EAGLES, KITES.

HEAD and neck usually covered with feathers, but in a few instances partially naked; bill, usually very strong, curved and very sharp; tarsi and toes, generally strong and muscular; claws, curved, sharp; wings, various, but usually large, and adapted to swift and vigorous flight. Size, very much varied, body generally very compact, and organized for strength and activity of habits, and for the destruction of living animals. Female larger than the male.

Inhabit all parts of the world, numerous in the temperate and torrid regions.

I. SUB-FAMILY FALCONINÆ. THE TYPICAL FALCONS.

Bill, short, hooked, upper mandible always furnished with a well defined tooth; head, rather large; feet and tarsi, very strong; toes and claws, long, the latter very sharp and strong; wings, long, pointed; tail, rather lengthened.

Embracing about fifty species, inhabiting all parts of the earth, and may be regarded as presenting the highest organization of the Rapacious form of Birds.

A.

I. GENUS *FALCO*. Linnæus Syst. Nat., I. p. 124. (1766.)

General form, robust and powerful; bill, short, with the upper mandible curved, and with a distinct tooth; nostrils, circular, with a central tubercle. Wings, long, pointed, formed for vigorous and rapid flight; tail, rather long; tarsi, short, robust, covered with rounded or hexagonal scales; middle toe long, claws large, curved, and very sharp. This genus, as restricted, contains

from fifteen to twenty species, found in various parts of the world, several of which more or less intimately resemble the *Falco peregrinus* of Europe, and the *Falco anatum* of America. They are remarkable for exceedingly rapid flight, and great boldness in attacking animals on which they prey.

I. *FALCO ANATUM*. Bonap. Comp. List p. 4. (1838.)

"*FALCO PEREGRINUS* GM." Wilson, Audubon and other authors.

Edwards' Birds, I. pl. 3, 4. Wilson Am. Orn. IX. pl. 76. Aud. B. of Am. pl. 16, octavo edition, I. pl. 20. De Kay, Nat. Hist. State of New York Birds, pl. 3. fig. 8. Lembeye B. of Cuba, pl. 1. fig. 2.

Bill, rather short, strong, very sharp, with a well defined tooth in the upper mandible; wings long, legs strong, middle toe long, claws curved, sharp.

ADULT. Frontal band white; top of the head, back, wing-coverts and rump, bluish cinereous; every feather crossed transversely with bands of brownish black; rump and lower part of the back lighter, and with the dark bands less numerous.

Throat, sides of the neck and upper part of the breast white, with a tinge of buff without spots, other under parts same color, with a deeper shade, and with cordate or rounded spots of black on the lower breast and abdomen, and *transverse* bars of the same black on the sides, under tail-coverts and tibiae. Quills, brownish black, with transverse bars of yellowish white on their inner webs. Tail, brownish black, with transverse bars of cinereous, very pale and nearly white on their inner webs, and narrowly tipped with white.

Cheeks with a patch of black most narrow and clearly defined in the adult bird, and separated from the color of the back of the head by a white space; back of the neck, mixed with yellowish feathers, forming an irregular collar. Bill, light bluish horn color, paler at the base; legs and feet fine yellow. Sexes alike.

YOUNGER. Entire plumage above, brownish black; nearly uniform on all parts, and with little or no appearance of the bars which are seen in the adult. Tail, uniform dark brown, with spots or irregular transverse stripes of reddish white frequently only on the inner webs. Frontal spot of white obscure, large space on the cheek, black not separated posteriorly from the same color of the head above. Under parts, white and yellowish white, every feather, except on the throat, with a wide *longitudinal* stripe of dark brown; the latter color prevailing on the sides and abdomen. Throat, white, nearly every feather with a very narrow central line of black. Tarsi and feet, bluish lead color.

DIMENSIONS. Female, total length 19 to 20 inches; wing, $14\frac{1}{2}$ to 15; tail, $7\frac{1}{2}$ to 8 inches. Male and young smaller.

HAB. The entire eastern portion of North America, and perhaps western; Greenland? Oregon? (U. S. Ex. Exp.) Jamaica, (Mr. Gosse.) Cuba, (Mr. Lembeye.) Bermuda, (Sir W. Jardine.) Spec. in Mus. Acad. Philada.

OBS. In the adult of this species, there is a white frontal band as in the adult of the European *F. peregrinus*.

It is very similar in color and general characters to that species, but is larger, and the young differ.

Audubon's figures represent the dark-colored plumage described above as that of young or immature birds. Wilson's figure is that of a more adult specimen, with the frontal band partially produced; but the bird in completely mature plumage, has never been figured.

This bird frequently appears in the United States, generally on the seacoast in the autumn and winter, at which seasons, also, according to Mr. Lembeye, it visits the island of Cuba. It flies with extraordinary vigor and rapidity, and is remarkable for its bold and destructive habits.

2. *FALCO NIGRICEPS*. Cassin,* *new species*. The Western Peregrine Falcon.

Very similar to the preceding, but smaller, and with the bill disproportionately weaker. Very similar, also, to *Falco peregrinus*, but differing from both in the colors of the young bird, and in other characters. **ADULT.** Frontal band of white, very narrow. Head and neck above, and cheeks, clear black, with a tinge of cinereous; other upper parts, bluish cinereous, every feather having transverse bands of brownish black, lighter on the rump and upper tail-coverts.

Throat and breast, pale reddish white; other under parts, lighter, with rounded spots and transverse bands of black, and with a tinge of cinereous on the flanks and abdomen. Tail above, pale bluish cinereous, with transverse bars of brownish black, and narrowly tipped with white. Patch of black on the cheek, very large, and scarcely separated from the same colors of the back of the head and neck.

DIMENSIONS. Total length, females (of skin) about 17 inches, wing 13 to 13½, tail 6 to 6¾ inches; males, total length 14½, wing 11½ to 12, tail 5½ to 6 inches.

YOUNGER. Entire plumage above, dark brown; many feathers, especially on the rump, tipped with rufous; tail above, brown, with a tinge of ashy, and barred with rusty on the inner webs. Under plumage pale reddish ferruginous, paler on the throat, all the feathers with broad longitudinal stripes of black, and many, also, with irregular transverse stripes of the same color, which predominates on the flanks and under wing-coverts, and which are marked with reddish white bars and circular spots. Tibia, with transverse bars of brownish black.

DIMENSIONS. Female (of skin), total length about 17 inches, wing 12, tail 6½ inches.

HAB. Bear creek, California, (Mr. E. M. Kern.) Coast of Lower California, (Dr. Heermann.) Chili, (Lieut. Gilliss.) Spec. in Mus. Acad. Philada., and Nat. Mus. Washington.

OBS. This bird, of which we have seen numerous specimens, appears to be distinct from *Falco anatum*. It is uniformly smaller than either that species or *F. peregrinus*, but resembles Indian or other Asiatic specimens of the latter strongly. The young differ from the young of the species just

* Dec. 1853.

mentioned, especially in the deeper and different red color of the under parts of the body. In this character they more resemble *Falco peregrinator* of India, *Falco puniceus* of Africa, *Falco melanogenys* of Australia. It has also generally the cheeks as strongly marked with a black patch as the latter, and can, by that character, be distinguished from either *F. anatum* or *F. peregrinus*.

This species appears to inhabit the western portion of America as far south as Chili.

3. *FALCO POLYAGRUS*. Cassin, *new species*. The American Lanier Falcon.

General form robust; bill, rather short, very strong; tooth prominent; wing, long, second and third quills longest, and nearly equal; tail, rather long. Female nearly adult. Narrow frontal band; line over the eye, cheeks and entire under parts, white; narrow stripe from the corner of the mouth, dark brown; some feathers on the breast and abdomen, with longitudinal stripes and spots of brown, which color forms a large spot on the flank, plumage on the sides also with spots of brown. Entire plumage of the upper parts, brown, many feathers with rufous edgings; paler on the rump; tail above, grayish brown, with transverse bars of white, and narrowly tipped with the same color. Quills, dark grayish brown, with numerous bars of white on their inner webs; under wing-coverts, dark brown; edge of wing at the shoulder and below, white, spotted with brown. The brown of the back extending somewhat on to the breast at the wing-joint. Bill, bluish horn color, under mandible yellow at its base. Large space around the eye, bare, with a narrow edging of brown on the first plumage encircling it.

YOUNGER FEMALE. Entire plumage brownish black, throat white, and many feathers on the under parts with edgings and circular spots of white; under wing-coverts, also, with circular spots of white; under tail-coverts with wide transverse stripes of white.

YOUNG MALE? Frontal band nearly obsolete; entire upper parts, uniform brown, with narrow rufous stripes on the head; under parts, white, with a tinge of reddish yellow, and nearly every feather with a narrow longitudinal stripe of blackish brown; large spaces on the flanks brown. Tarsi and feet lead colored.

DIMENSIONS. Female (of skin), total length about 20 inches, wing 14, tail 8 inches.

HAB. Sources of the Platte river, (Dr. Townsend.) California, (Dr. Heermann.) Puget's Sound, (U. S. Ex. Exp. Vincennes.) Spec. in Mus. Acad. Philada., and in Nat. Mus. Washington.

OBS. Very similar, in the two first stages of plumage above described, to *Falco jugger* of India, (Gray's Illustrations of Indian Zoology, II. pl. 26, and Jerdon's Illustrations of Indian Ornithology, pl. 44,) but larger. We have, however, never seen the young of *F. jugger* in the plumage of the young of our species as described above, from Dr. Heermann's Californian specimens. This is the first species of this group of Falcons (the Laniers and Juggers) yet discovered in America, and is especially remarkable on account of its near affinity to the Asiatic species.

II. GENUS HIEROFALCO. CUVIER, REG. AN. I. p. 312, (1817.)

SIZE, large. Bill, short, thick, distinctly toothed, and with a slight festoon; wings rather shorter than in *Falco*; tarsi and toes shorter, the former covered with small circular scales. Color of adult usually white. Contains several species inhabiting the northern regions of both continents, nearly all of which were regarded with great favor for the purposes of Falconry.

1. HIEROFALCO SACER. (Forster.) The American Gyr Falcon.

FALCO SACER. Forster, Phil. Trans. London, LXII. p. 423. (1772.)

FALCO FUSCA. Fabricius Fauna Grœnlandica, p. 56, (1780,) not Gmelin, (1788.)

FALCO CINEREUS. Gmelin, Syst. Nat. I. p. 267. (1788.)

FALCO GRÆNLANDICUS. Turton, Syst. Nat. I. p. 147. (1806.)

FALCO LABRADORA. Audubon, B. of Am. p. 196, (name on plate pub. about 1834.)

"FALCO CANDICANS. Gmelin." Bonap. Cons. Av. p. 23.

"FALCO GRÆNLANDICUS. Turton," Hancock in Ann. and Mag., Nat. Hist. II. p. 249.

"FALCO ISLANDICUS. Lath." Aud. Orn. Biog. II. p. 552.

Edwards' Birds, II. pl. 53, young. Aud. B. of Am. pl. 196, young, (but not pl. 366 which represents another species.) Schlegel, Traité de Fauconnerie, pl. (no number,) adult. Ann. & Mag. Nat. Hist. II. pl. 10, (feathers.)

Form strong, and robust; second and third quills (in the young bird) longest and nearly equal. Adult, according to Hancock as cited above, "ground of the plumage pure white, upper parts elegantly marked with arrow shaped spots of a dark gray; under parts and head streaked with the same; wings reaching to within two inches of the end of the tail; second primary the longest."

YOUNG. Entire plumage, brown, tinged with cinereous on the upper parts. Throat, dull white; all the plumage of the under parts edged with and having circular spots of dull yellowish white, the rounded spots more apparent on the tibia and under tail-coverts. Quills, mottled with the same white on their inner webs; tail, with numerous (about thirteen) irregular bars of the same." Bill and cere, pale blue; iris, brownish black. Feet, grayish blue; the under parts of the toes greenish yellow; claws dusky." (Audubon.)

HAB. Northern America. Greenland, (Fabricius, Hancock,) Hudson's Bay, (Richardson,) Labrador, (Audubon,) Louisville, Kentucky, (Mr. C. W. Webber.) Spec. in Mus. Nat. Hist. Soc. Charleston, S. C.

Obs. The Gyrfalcon is of very rare occurrence in the United States, though not unfrequent in the northern regions of this continent.

Mr. Hancock, whose opportunities were ample, fully demonstrates (as cited above) that the *Falco grœnlandicus* of Greenland, which is the present species, and the *Falco islandicus* of Iceland, are distinct, which appears to be assented to by all late writers. The bird, figured by Mr. Audubon as the adult of the species of which the young bird was obtained by him in Labrador, was an Iceland specimen, (Orn. Biog. IV. p. 476,) and therefore not correctly given as the American bird. We have never had the satisfaction of seeing the adult of this species; but for an opportunity of examining one of Mr. Audubon's Labrador specimens, we are indebted to the Rev. John Bachman, D. D., of Charleston, S. C., who, with that disposition to advance the interests of Zoological Science which has always characterized him, most kindly forwarded it at our request.

Turton's description above cited, is copied by him from Pennant's Greenland Falcon, Arctic Zoology, I. p. 257.

III. GENUS HYPOTRIORCHIS. BOIE ISIS, p. 976. (1826.)

DENDROFALCO. GRAY LIST, p. 3. (1840.)

Size small, tarsus lengthened and rather slender. In all other characters much like typical *Falco*. Toes long, slender and furnished with sharp, curved claws. This genus includes about ten or twelve small species found in various parts of the world, and for the greater part dark colored, like the species of typical *Falco*.

1. HYPOTRIORCHIS COLUMBARIUS. (Linn.) The Pigeon Hawk.

FALCO COLUMBARIUS. Linn. Syst. Nat. I. p. 128. (1766.)

FALCO INTERMIXTUS. Daudin, Traite d'Orn. II. p. 141. (1800.)

FALCO TEMERARIUS. Aud. B. of Am. I. p. 381. (1831, plate pub. 1829.)

"FALCO ÆSALON. Temm." Rich. and Sw. Faun. Bor. Am. Birds, p. 37.

Cat. Car. pl. 3. Vieill. Ois. d'Am. Sept. pl. 11. Wils. Am. Orn. II. pl. 15, fig. 3. Faun. Bor. Am. Birds, pl. 25. Aud. B. of Am. pl. 75, 92. Oct. ed. I. pl. 21. De Kay, Nat. Hist. N. Y. pl. 4, fig. 9.

Small, head and body broad and strong, bill short, wing pointed with the second and third quills longest, tail slightly rounded, tarsi and toes slender. ADULT MALE. Entire

plumage of the upper parts dusky slate color, inclining to bluish, every feather with a black longitudinal line. Forehead and throat white, other under parts pale yellowish or reddish white, every feather with a narrow longitudinal stripe of brownish black, plumage of the tibia, light rusty red, with narrow stripes of black. Quills black, with transverse bands of white on their inner webs, and narrowly tipped with ashy white, tail above light bluish cinereous tipped with white, and with a wide subterminal band of black, and with several other narrower bands of black, inner webs nearly white. Cere and feet yellow, bill blue.

MIDDLE AGE OR WINTER PLUMAGE? Entire upper plumage, brownish black, slightly mixed with rufous on the head and neck behind, white of the face, and under parts more deeply tinged with reddish yellow, dark stripes wider, plumage of the sides, with wide transverse bands of brownish black, predominating on some feathers, and the yellowish white, assuming the form of circular spots. Tail dark brown, nearly black tipped, and with four bars of white, upper tail coverts with spots of white at their bases. Feet yellow.

YOUNGER AND ADULT FEMALE? Entire upper plumage, dusky brown, quite light, and with a tinge of ashy in some specimens. Head above with narrow stripes of dark brown and rusty red, and in some specimens, many irregular spots and edgings of the latter color, on the other upper parts. Forehead and entire under parts white, with longitudinal stripes of light brown. Plumage of the sides and flanks light brown, with pairs of circular spots of white, tibia white, with dashes of brown, tail above and below pale brown, with about six bands of white. Neck behind with a distinct band of white.

DIMENSIONS. Total length (of skin,) females, 12 to 14 inches, wing, 8 to 9, tail, 5½ inches. MALE. Total length, 10 to 11 inches, wing, 7½ to 8, tail, 5 inches.

HAB. North and South America. Wisconsin, (Dr. Hoy.) California, (Mr. J. G. Bell.) Oregon, (Col. McCall, Dr. Townsend.) Cuba, (M. de Sagra.) Jamaica, (Mr. Gosse.) New Granada, (M. Parzudaki.) Bermuda, (Sir. W. Jardine.) Spec. in Mus. Acad. Philada.

OBS. The adult of this species is with difficulty distinguishable from the European *H. æsalon*, but we have never seen the latter in the nearly black plumage, which we regard as characterizing the young or winter plumage, of the American bird. The light, "liver brown" plumage, represented by European authors as the female of *F. æsalon*, frequently occurs in this bird, and is given by Rich. and Swains. in Fauna Boreali Americana, Birds, pl. 25. The adult which appears to be *Falco temerarius*, Aud., is figured in B. of Am. pl. 75, the other figures by Aud. pl. 92, and Wilson's plate, represent this bird in the dark plumage as described above.

Adult specimens from Western America, even more closely resemble the European species, but differ from the Eastern American only in small and scarcely describable particulars, as the slightly greater extent of the white front, or the greater purity of the white of the throat and breast. We

regard the stage of plumage above described as that of the female, (and as figured by Rich. and Swains.) principally on account of its analogy to the female of the nearly allied European species.

This bird is of frequent occurrence in the United States. The largest specimens that we have ever seen are from Oregon, and may prove to be of a distinct species, though we cannot at present, determine.

IV. GENUS TINNUNCULUS. VIEILL. OIS. d'AM. SEPT. I. p. 39. (1807.)

CERCHNEIS. BOIE ISIS, p. 976. (1826.)—POECILORNIS. KAUP CLASS. DER SAVG. UND VOG p. 108. (1844.)

SIZE small, tarsus and toes lengthened, slender. Colors generally more or less rufous and white. In all other respects similar to typical *Falco*. This genus comprises about twelve very handsome species of small size, inhabiting various countries.

1. TINNUNCULUS SPARVERIUS. (Linn.) The Sparrow Hawk.

FALCO SPARVERIUS. Linn. Syst. Nat. I. p. 128. (1766.)

FALCO DOMINICENSIS. Gm. Syst. Nat. I. p. 285. (1788.)

FALCO GRACILIS, CINNAMOMINUS and ISABELLINUS. Sw. Cab. Cy. p. 281. (1838.)

Vieill. Ois. d'Am. Sept. pl. 12, 13. Cat. Car. pl. 5. Buff. Pl. Enl. 465. Wilson Am. Orn. II. pl. 16, fig. 1, and IV. pl. 32, fig. 2. Faun. Bor. Am. Birds, pl. 24. Aud. B. of Am. pl. 42. Oct. ed. I. pl. 22. Nat. Hist. N. Y. Birds, pl. 7, fig. 16.

Small, wings moderate, tail rounded. ADULT MALE. Frontal band, space including the eyes and throat, white; spot on the neck behind, two others on each side of the neck, and line running downwards from before the eye, black. Head above, and wing coverts, bluish cinereous, the latter usually spotted with black. Spot on the top of the head, the neck behind, back, rump, and generally the tail above, light rufous or cinnamon red. Under parts generally a pale shade of the same color, frequently nearly white, but sometimes nearly as dark as the back, and always with more or less numerous circular, or oblong spots of black. Quills brownish black, with white bars on their inner webs. Tail tipped with white, sometimes tinged with rufous, and with a broad subterminal band of black, frequently with several of the outer feathers, white tinged with ashy, and barred with black. Bill blue, legs and feet yellow. Back generally with more or less numerous transverse stripes of black. Rufous spot on head, much varying in size, and sometimes wanting.

FEMALE. Upper parts as above, and wing coverts, and tail rust red, with numerous transverse bands of brownish black, under parts with numerous longitudinal stripes, and on the sides and flanks, with transverse bands of the same color, external feathers of the

tail palest, broad subterminal band on the tail, obscure or wanting. YOUNG MALE. Wing-coverts, dark bluish cinereous with large circular spots, and with bands of brownish black, all the rufous parts with broad bands of the same color, under parts with large circular spots, and wide traverse bands of black on the sides and flanks.

DIMENSIONS. Total length, 11 to 12 inches, wing 7 to 7½, tail 5 to 5½ inches. Sexes nearly alike in size.

HAB. The entire continent of America. California, (Mr. Bell.) Mexico, (Mr. Pease.) Cuba, (M. de Sagra.) Bermuda, (Sir W. Jardine.) Chili, (Lieut. Gilliss.) Patagonia, (Ex. Exp. Vincennes.) Spec. in Mus. Acad. Philada.

OBS. This elegant little Hawk, is one of the most handsomely colored of the Rapacious Birds of North America, and is frequently met with.

It is widely diffused, being common to all parts of the United States, and we have seen numerous specimens brought in collections from various parts of South America. The young bird has never been figured. Specimens from all parts of America are very similar, and we have seen the stages of plumage, which have been considered as indicating distinct species by eminent authors, but they do not appear to be constant, nor peculiar to any locality.

II. SUB-FAMILY ACCIPITRINÆ. THE HAWKS.

Bill short, hooked, upper mandible lobed, but not toothed. Wings rather short, tail long, and rather wide, tarsi rather long and slender, toes and claws long, the latter curved and sharp. Embraces forty to fifty species, amongst which are birds of all countries. They are very vigilant and active and swift of flight, and have as a peculiar character amongst the *Falconidæ*, the habit of pursuing their prey into woods and forests.

I. GENUS ASTUR. LACEPEDE MEM. INST. III. p. 506.

SPARVIUS. VIEILL, ANAL. p. 24, (1816.) LEUCOSPIZA. KAUP, CLASS, p. 118, (1844.)

General form, strong, but somewhat slender; bill short, curved, festooned; nostrils large, somewhat ovate, inserted in the cere. Wings moderate; tail, long and broad. Tarsi rather lengthened; covered in front with rather wide transverse scales; toes and claws, rather long, the latter sharp. This genus contains about twelve species of all countries.

1. ASTUR ATRICAPILLUS (Wilson.) The Goshawk. The Black-capped Hawk.

FALCO ATRICAPILLUS. Wilson Am. Orn. VI. p. 80. (1812.)

FALCO REGALIS. Temm. P. col. I. (liv. 84 about 1827.)

DÆDALION PICTUM. Less. Traité d'Orn. I. p. 67. (1831.)

Wilson Am. Orn. VI. pl. 52, fig. 3. Faun. Bor. Am. Birds, pl. 26.
Jard. and Selby, Ill. Orn. pl. 121. Aud. B. of Am. pl. 141, Oct. ed. I. pl. 23. Temm. Pl. col. 495.

Large, general form, rather slender; wings, short. ADULT. Head above, neck behind and stripe from behind the eye, black, generally more or less mixed with ashy; other upper parts bluish cinereous, with the shafts of the feathers black; a conspicuous stripe over the eye, and an obscure collar on the back of the neck white. Entire under parts white, every feather with a longitudinal line of brownish black, and several transverse narrow and usually irregular bands of ashy brown. Quills, brown, with bands of a deeper shade of the same color, and with mottled white bands on their inner webs. Tail, dark brownish cinereous, with irregular bands of brownish black, and narrowly tipped with white; under surface very pale, nearly white; under tail-coverts pure white. YOUNG. Head above and other upper parts, dark brown mixed with rufous, especially on the head and neck. Under parts, white, tinged with fulvous, with large oblong and circular spots of deep brown.

DIMENSIONS. Total length, female, 22 to 24 inches, wing about 14, tail $10\frac{1}{2}$ to 11 inches; male, 19 to 20 inches, wing 13, tail $9\frac{1}{2}$ to 10 inches.

HAB. Northern and eastern North America. Spec. Mus. Acad. Philada.

OBS. Resembles to some extent the Goshawk of Europe, (*Astur palumbarius*.) with which it has been confounded by some American authors. It is about the same size, but may easily be distinguished by its lighter color, and by its much narrower and more numerous bands on the inferior parts of the body. It is in all respects a distinct species, as described by Wilson and by Temminck.

The young male of this bird may readily be mistaken for the young female of the succeeding species, (*Accipiter Cooperi*.) but can be distinguished by the different color and markings of the under parts of the body. In some specimens of this species, the transverse bands on the under parts are so irregular or broken, as to present a nearly uniformly mottled aspect. This stage of plumage is represented in Audubon's plate, but is not the most common.

II. GENUS ACCIPITER. BRISSON, ORN. I. 310. (1760.)

NISUS. CUVIER, REGNE AN. I. p. 321, (1817.) HIERASPIZA. KAUP CLASS. p. 116, (1844.)

General characters very similar to those of *Astur*, but the species are generally more slender and much smaller. Wings short, with the fourth

quill usually slightly longest, shorter than in *Astur*; tail long; tarsi rather long and slender, and frequently with the scales of the tarsi nearly obsolete. Contains about twenty species of all countries, many of which bear more or less resemblance to the *Accipiter nisus* of Europe.

1. ACCIPITER FUSCUS. (Gmelin.) The Sharp-shinned Hawk. The Chicken Hawk.

FALCO FUSCUS, AND DUBIUS. Gm., Syst. Nat. I. p. 280, 281. (1788.)

ACCIPITER STRIATUS. Vieill. Ois. Am. Sept. I. p. 42, (1807.)

FALCO VELOX, AND PENNSYLVANICUS. Wilson Am. Orn. V. p. 116, and VI. p. 13, (1812.)

SPARVIUS LINEATUS. Vieill. Ency. Meth. III. p. 1266. (1823.)

NISUS MALFINI. Less. Traite I. p. 58. (1831.)

ACCIPITER FRINGILLOIDES. Vig. Zool. Jour. III. p. 434. ? (1827.)

Temm. Pl. col. 67. Vieill. Ois. d'Am. Sept. pl. 14. Wilson, Am. Orn. V. pl. 45, fig. 1, VI. pl. 46, fig. 1. Aud. B. of Am. pl. 374, Oct. ed. I. pl. 25.

Small, tail rather long, with the end nearly even; tarsi and toes slender. Adult, entire upper parts dark brownish black tinged with ashy, occiput mixed with white. Throat, and under tail-coverts, white, the former with very fine lines of black on the shafts of the feathers; other under parts, fine light rufous, deepest on the tibia, and with transverse bands of white; shafts of the feathers with lines of dark brown. Tail, ashy brown, tipped with white, and with about four bands of brownish black. Quills, brownish black, with bands of a darker shade, and of white on their inner webs; secondaries and tertiaries, with large partially concealed white spots. Shafts of quills tinged with reddish. YOUNG. Entire upper parts umber brown, tinged with ashy; neck behind mixed with white; greater wing-coverts and shorter quills, with large white spots partially concealed. Under parts white, with longitudinal stripes and circular spots of reddish brown, changing into transverse bands on the flanks and tibiæ; under tail-coverts, in many specimens, pure white.

DIMENSIONS. Total length, female, 12 to 14 inches, wing $7\frac{1}{2}$ to 8, tail $6\frac{1}{2}$ to 7 inches; male, total length 10 to 11, wing 6 to $6\frac{1}{2}$, tail 5 to $5\frac{1}{2}$ inches.

HAB. Throughout North America. Hudson's Bay, (Richardson,) Wisconsin, (Hoy,) Texas, (Audubon,) California, (Heermann,) New Mexico, (McCall,) Mexico, (Pease.) Spec. in Mus. Acad. Philada.

OBS. This little Hawk is one of the most common of the North American species. It is very similar, when adult, to the *Accipiter nisus* of Europe, but the young differ, as is the case with nearly all our Hawks which resemble birds of the old world. We have never seen a specimen of *A. fuscus* with the transverse bands on the under parts regular and unbroken, as is commonly met with in the young female of *A. nisus*.

Though we regard the law of priority as of great importance, we have in the case of this species continued Gmelin's specific name *fuscus*, (1788,) though it had been previously used by Fabricius, (1780; see *Hierofalco sacer* in this synopsis.) We know of no practical benefit, however, that would now result from the alteration of this long established name, especially as the *fuscus* of Fabricius is a synonyme itself. Any naturalist, however, being so moved, may call this bird *Accipiter dubius*, if he chooses, and shall not be molested by us.

2. ACCIPITER COOPERII. (Bonaparte.) Cooper's Hawk.

FALCO COOPERII. Bonap. Am. Orn. II. p. 1. (1828.)

FALCO STANLEII. Aud. Orn. Biog. I. p. 186. (1831.)

Bonap. Am. Orn. pl. 1, fig. 1, young. Aud. B. of Am. pl. 36, 141, fig. 3; Oct. ed. I. pl. 24, adult and young.

Larger than the preceding; slender; wings short; tail rounded. Adult, head above brownish black, mixed with white on the occiput; other upper parts dark ashy brown, with the shafts of the feathers brownish black; an obscure rufous collar on the neck behind. Throat and under tail-coverts white, the former with lines of dark brown; other under parts transversely barred with light rufous and white; tail, dark cinereous, with four wide bands of brownish black, and tipped with white; quills ashy brown, with darker bands, and white marks on their inner webs. YOUNG. Head and neck behind yellowish white tinged with rufous, and with longitudinal oblong stripes of brown; other upper parts light umber brown, with large partially concealed spots and bars of white; upper tail-coverts tipped with white; under parts white, with narrow longitudinal stripes of light brown; tail as in adult.

DIMENSIONS. Female, total length 18 to 20 inches, wing 10 to 11, tail $8\frac{1}{2}$; male, 16 to 17, wing $9\frac{1}{2}$ to 10, tail 8 inches.

HAB. The entire territory of the United States. Chili, (Gay.)

Spec. in Mus. Acad. Philada.

OBS. Rather a difficult species to the ornithologist, on account of the great variations in its colors, and in size also. It is, in fact, unusual to find two alike in a dozen specimens. Very similar when adult to *A. fuscus*, but much larger. The adults of both sexes are the same in color. We have latterly suspected that the smaller specimens usually considered as young males of this bird, are really the young of the species next below, (*A. Mexicanus*.)

This bird is of frequent occurrence in the United States.

3. ACCIPITER MEXICANUS. Swainson. The Mexican Black-capped Hawk.

ACCIPITER MEXICANUS. Swains. Faun. Bor. Am. Birds p. 45, (1831,) not figured.

Smaller than the preceding; tail long, rounded. Adult, head above black; other upper parts dark brownish black, with a tinge of cinereous, darkest on the back. Throat and under tail-coverts white; other under parts fine light rufous, deepest on the tibiæ, and barred and spotted with white nearly obsolete on the breast, sides and tibiæ, the longitudinal dark lines on the shafts of the feathers, (conspicuous in *A. Cooperi*,) barely discernible on the breast. Quills, dark brown, edged exteriorly with ashy, and with bands of darker brown and white on their inner webs; tail, dark cinereous, tipped with white, and with four bands of brownish black, that near the base of the tail obscure. Young, head and neck behind, and upper part of the back, dark rufous, striped with brownish black; other upper parts umber brown; under parts white, with longitudinal narrow stripes of brown; wings and tail as in adult; upper tail-coverts tipped with white. "Iris, carmine," Dr. Gambel.

DIMENSIONS. Total length, male, 15 inches, wing 9, tail 8 inches.

HAB. California (Dr. Gambel, Mr. Bell); Mexico (Mr. Pease); Eastern? Spec. in Mus. Acad. Philada.

OBS. Similar for the greater part, to *A. Cooperii*, but smaller, and with the tail and tarsi comparatively longer, and with the fine red of the under parts more uniform, the white stripes being nearly obsolete. Several specimens of both adults and young were brought in the fine collection made in California by Mr. J. G. Bell, of New York, and it was previously brought from the same country by Dr. Gambel, and from Mexico by Mr. Pease.

III. SUB-FAMILY BUTEONINÆ. THE BUZZARDS.

Bill short, strong, upper mandible curved, and with its edges festooned; wings long and broad; tail moderate, rather short; legs and feet moderate; toes rather short. General form heavy; flight vigorous, and capable of being long continued, but not so swift as in preceding sub-families. This group comprises about twenty-five species of all countries.

I. GENUS BUTEO. CUVIER, REG. AN., I. p. 323. (1817.)

PŒCIOPTERNIS. KAUP, ISIS, 1847, p. 329.

Bill short, wide at base, edges of upper mandible festooned; nostrils large, ovate; wings long, wide, fourth and fifth quills usually longest; tail moderate, rather wide; tarsi rather long, and having transverse scales before and behind, but laterally small circular scales; toes moderate, rather short; claws strong. Comprises about twenty species, inhabiting all countries.

1. BUTEO BOREALIS. (Gmelin.) The Red-tailed Hawk. The American Buzzard.

FALCO BOREALIS, LEVERIANUS and JAMAICENSIS. Gmelin, Syst. Nat., I. p. 266. (1788.)

FALCO AQUILINUS. Bartram, Trav., p. 290. (1791.)

BUTEO FERRUGINICAUDUS. Vieill., Ois. d'Am. Sept., I. p. 32. (1807.)

ACCIPITER RUFICAUDUS. Vieill., Ois. d'Am. Sept., I. p. 43. (1807.)

BUTEO FULVUS and AMERICANUS. Vieill., Nouv. Dict., IV. pp. 472, 477. (1816.)

Vieill., Ois. d'Am. Sept., I. pl. 6, 14; Wils., Am. Orn., VI. pl. 52, figs. 1, 2; Aud., B. of Am., pl. 51, oct. ed., I. pl. 7; Gosse, Ill. B. of Jamaica, pl. 2; Lembeye, B. of Cuba, pl. 1, fig. 1.

ADULT. Tail bright rufous, narrowly tipped with white, and having a subterminal band of black. Entire upper parts dark umber-brown; lighter, and with fulvous edgings, on the head and neck; scapulars, with a generally concealed basal portion, white, with brown bands; upper tail-coverts generally yellowish white, but frequently on their inner webs of the same rufous as the tail, and with brown spots and bands. Throat white, with brown longitudinal stripes; other under-parts yellowish-white or fawn color, with many longitudinal lines and spots of reddish-brown, tinged with fulvous, most numerous on the breast, and an irregular band across the abdomen of oblong longitudinal spots and narrow transverse bars; under tail-coverts and tibiae generally immaculate, but the latter frequently spotted, and transversely barred with light rufous. Under surface of the tail silvery white. **YOUNG.** Tail, in many specimens, pale-brown, with numerous bands of a deeper shade of the same color, and tipped with white; upper tail-coverts white, banded more or less regularly with dark-brown; other upper parts dark umber-brown, many feathers narrowly edged with white and with partially concealed spots of white. Entire under-parts white, sides of the breast with large oval spots of brown, and a wide irregular band on the abdomen composed of similar spots of the same color; tibiae and under tail-coverts with irregular bands and sagittate spots of brown.

DIMENSIONS. *Female*—total length, 22 to 24 inches; wing, $15\frac{1}{2}$ to 16; tail, $8\frac{1}{2}$ inches. *Male*— $19\frac{1}{2}$ to 21 inches; wing, 14; tail, $7\frac{1}{2}$ to 8 inches.

HAB. Eastern North America; Fur-countries (Richardson); Wisconsin (Hoy); Florida (Bartram); Jamaica (Gosse); Cuba (Lembeye).

OBS. One of the most common and easily recognized of the North American species. It is diffused throughout the eastern portion of the continent, but in the west appears to be replaced by the succeeding.

2. **BUTEO SWAINSONI.** Bonaparte, Comp. List, p. 3. (1838.) The Western Buzzard.

BUTEO MONTANA. Nutt., Man. Orn., I. p. 112. (1840.)

"**BUTEO VULGARIS.**" Rich. and Sw., Faun. Bor. Am. Birds, p. 47.

"**FALCO BUTEO.** LINN." Aud., Orn. Biog., IV. p. 508.

Faun. Bor. Am. Birds, pl. 27; Aud., B. of Am., pl. 372, oct. ed., I. pl. 6.

General form and appearance very similar to *B. borealis*, but rather larger, and with the wings longer; neck and upper part of the breast brown; tibiae light rufous, with transverse bars of a deeper shade of the same. Tail bright rufous, narrowly tipped with white, and with a subterminal band of black; upper tail-coverts rufous and white; entire other upper parts dark umber-brown, with partially concealed ashy-white and pale fulvous bands and spots on the scapulars and shorter quills. Lower breast white, tinged and with irregular transverse bands of pale-rufous; abdomen with a broad irregular transverse band composed of longitudinal lines and oblong spots of brown, and tinged with rufous. This abdominal band nearly obsolete in some specimens. Under tail-coverts yellowish-white; under surface of the tail silvery-white, with a reddish shade.

YOUNG. Upper parts dark-brown, edged and spotted with white tinged with rufous; tail above ashy-brown, with dark-brown bands, and tipped with white. Under parts white, on the sides and abdomen with large oblong spots of brown; tibiae and under tail-coverts white, with transverse bars and large spots of brown.

DIMENSIONS. *Female* — total length, 23 to 26 inches; wing, $16\frac{1}{2}$ to 17; tail, 9 to 10 inches. *Male* — smaller.

HAB. Northern and western regions — Rocky Mountains and Oregon (Dr. Townsend); California (Mr. Bell); Wisconsin (Dr. Hoy); Mexico (Rivoli collection).

OBS. Nearly related to *B. borealis*, and much resembling it. We have never seen, however, specimens of the latter with the brown space on the neck and breast so extensive as in specimens of the present species brought from California by Mr. Bell, nor with the transverse bars on the abdomen, as is usual in this species, and as represented in the plate in Fauna Boreali Americana. It is brought frequently in collections from Western America; and the young may be *Buteo ventralis*. Gould.

3. BUTEO LINEATUS. (Gmelin.) The Red-shouldered Hawk. The Winter Falcon.

FALCO LINEATUS and HYEMALIS. Gm., Syst. Nat., I. pp. 268, 274. (1788.)

FALCO BUTEOIDES. Nutt., Man., I. p. 100. (1st edition, 1832.)

Vieill., Ois. d'Am. Sept., pl. 5; Wils., Am. Orn., pl. 53, fig. 3; Aud., B. of Am., pl. 56, 71, oct. ed., I. pl. 9; Nat. Hist. N. Y., pl. 6, fig. 13.

Smaller than the preceding. **ADULT.** Wing-coverts, from its flexure to the body, fine bright rufous; breast and other inferior parts paler rufous; many feathers with narrow lines of black on their shafts, and spotted and barred transversely with white; the latter color predominating on the under tail-coverts. Entire upper-parts brown; on the head and neck much mixed with rufous, and with white spots on the wing-coverts and shorter quills and rump; quills brownish-black, spotted with white on their outer webs, and with bars of a lighter shade of the same color and of white on their inner webs; tail brownish-black, with about five transverse bands of white, and tipped with white. **YOUNGER.** Under parts with large sagittate spots and wide bars of rufous, tinged with brown. **YOUNG.** Entire under-parts yellowish-white, with longitudinal stripes and oblong spots of brown; throat brown; upper parts brown, with partially concealed spots and bars of white; quills dark-brown, with wide bars of rufous, and white on both webs; tail brown, with many bands of pale brownish and rufous-white; tail beneath silvery-white.

DIMENSIONS. *Female* — total length, 22 to 24 inches; wing, 14; tail, 9 inches. *Male* — total length, 18 to 20 inches; wing, $11\frac{1}{2}$ to 12; tail, 8 inches.

HAB. North America; Oregon (Townsend); California (Heermann); Wisconsin (Hoy); South Carolina (Gibbes).

OBS. An abundant and rather difficult species to the student. The young bird, which is *Falco hyemalis* Gm., is the more usually met with, and bears very little resemblance to the adult.

4. BUTEO BAIRDII. Hoy, Proc. Acad. Philada., VI. p. 451. (1853.)

FEMALE. Rather smaller than *B. lineatus*; wings long and pointed; third primary longest; tail moderate, rounded. Entire upper-parts dark brown, with a purplish-bronze lustre, especially on the primaries; plumage of the head and neck behind, and some feathers on the back, edged and tipped with yellowish-white; upper tail-coverts yellowish-white, with transverse bars of brown. Tail above brownish-cinereous, and having about ten narrow

bands of brownish-black, and tipped with white. Under parts pale pellowish-white, or fawn color, with a few sagittate spots of brown on the sides, and a stripe of brown running downwards from the corner of the mouth. Forehead white; under wing-coverts yellowish-white. Cere, legs, and irides, yellow.

YOUNGER? Upper parts very dark-brown, or nearly black, with purplish lustre. Under parts with almost every feather having a large spot of brownish-black, which color predominates on the breast, so as to present a nearly uniform color with the upper parts; throat with narrow stripes of the same color. Flanks and inferior wing-coverts with circular and oval spots of white. Tibiæ dark-brown, with transverse bars and circular and oval spots of reddish-white. Upper tail-coverts reddish-white, with their outer edges brown, and with transverse stripes of the same. Under tail-coverts yellowish-white, with transverse stripes of brown. Forehead white; cheeks yellowish-white. Stripes from the corners of the mouth wide and conspicuous. Sex unknown.

DIMENSIONS. *Female* — total length (of skin), 19½ inches; wing, 15; tail, 8 inches, and about an inch longer than the folded wings.

HAB. Wisconsin. Spec. in Mus. Acad. Philada.

OBS. This is a well-marked species, especially in the stage of plumage described above as probably the younger, in which the nearly uniformly brownish-black breast and large spots of the same color on the other under-parts, are striking characters. The first-described plumage resembles that of *B. pennsylvanicus*. We have seen only the two specimens now described, both of which are from the State of Wisconsin.

5. BUTEO PENNSYLVANICUS. (Wilson.) The Broad-winged Hawk.

FALCO PENNSYLVANICUS. Wils., Am. Orn., VI. p. 92. (1812.)

FALCO LATISSIMUS. Wils., Am. Orn., VI. p. 92. (1812. Copies printed later than those containing the preceding name.)

SPARVIUS PLATYPTERUS. Vieill., Ency. Meth., III. p. 1273. (1823.)

FALCO WILSONII. Bonap., Jour. Acad. Philada., III. p. 348. (1824.)

Wils., Am. Orn., VI. pl. 54, fig. 1; Aud., B. of Am., pl. 91, oct. ed. I. pl. 10; Nat. Hist. N. Y. Orn., pl. 5, fig. 11.

Smaller than either of the preceding. ADULT. Entire upper-parts dark umber-brown; feathers on the back of the neck white at their bases. Throat white, with narrow longitudinal lines of brown, and with a patch of brown on each side, running from the base of the lower mandible; breast with a wide band composed of large cordate and sagittate spots and transverse stripes of reddish-ferruginous tinged with ashy; other under-parts white, with numerous sagittate spots disposed to form transverse bands on the lower part of the breast, flanks, abdomen, and tibiæ. In some specimens, in winter plumage, the ferruginous color predominates on all the under parts, except the under tail-coverts, and all the feathers have large circular spots on each edge; under tail-coverts white. Tail dark-brown, narrowly tipped with white, and with one broad band of white and several other narrower bands nearer the base. Quills brownish-black, widely bordered with pure white on their inner webs. YOUNG. Plumage above umber-brown, edged on the head and back of the neck with fulvous, and with many feathers on other upper-parts edged with the same color and ashy-white; upper tail-coverts spotted with pure white. Under-parts white, generally tinged with yellowish, many feathers having oblong and lanceolate longitudinal stripes and spots of brown; a stripe of brown on each side of the neck from the base of the under mandible. Tail brown, with several bands of a darker shade of the same and of white on the inner webs of the feathers and narrowly tipped with white.

DIMENSIONS. *Female*—total length, 17 to 18 inches; wing, 11; tail, $6\frac{1}{2}$ to 7 inches. *Male*—smaller.

HAB. Eastern North America; Florida (Abadie); Long Island (Giraud); Wisconsin (Hoy). Spec. in Mus. Acad. Philada.

OBS. This handsome little species is of rather unusual occurrence in the middle and southern States, though according to Dr. Hoy it is abundant in Wisconsin. It is an easily recognized species, though presenting considerable variations in color, according to age and season.

The names *Falco pennsylvanicus* and *Falco latissimus* occur in different copies of the sixth volume of the original edition of Wilson (1812), and the probability is that the latter was substituted by the author, in the later printed copies, after he had noticed that he had previously applied the name *pennsylvanicus* to another species. Of the last three volumes only second editions were published under the editorship of Mr. Ord; the seventh and eighth in 1824, and the ninth in 1825. The statement in Hall's edition, I. p. 92 (Philadelphia, 1828), that the name *latissimus* was given by Mr. Ord, is therefore incorrect. That gentleman, now President of the Philadelphia Academy, and of whose advice and instruction we have the great advantage and gratification, informs us that he had nothing to do with either of the names to which we here allude.

6. **BUTEO HARLANI.** (Aud.) Harlan's Buzzard. The Black Warrior.

FALCO HARLANI. Audubon, Orn. Biog., I. p. 441. (1831. Plate pub. 1830.)

"**BUTEO BOREALIS.**" Gray, Catalogue of Birds in British Museum, Accipitres, p. 34.

BUTEO ALBONOTATUS. Gray, Cat. Brit. Mus., Accipitres, p. 36; Kaup, Isis, 1847, pp. 329, 369?

Aud., B. of Am., pl. 86, oct. ed. I. pl. 8.

"Head very large; neck short; body robust. Feet of ordinary length; tarsus a little compressed, scutellate before and behind, reticularly scaly on the sides; toes scutellate above, scaly on the sides, tubercular and scabrous beneath; claws curved, roundish, very acute. Plumage compact; feathers of the head and neck short and rounded; tibial feathers elongated, and loose at the tips. Wings long; first quill short, third and fifth equal; first primaries cut out on the inner web towards the end. Tail longish, ample, of twelve broad, rounded feathers. Bill light-blue, black towards the end; cere and angles of the mouth yellowish-green. Iris light yellowish-brown. Feet dull greenish yellow; claws black.

"The general color of the plumage is deep chocolate-brown; the under-parts lighter, the feathers there being margined with light-brown. Tail lighter than the back, and rather narrowly barred with brownish-black, the tips brownish-red. Under wing-coverts whitish, spotted with deep-brown. Length, 21 inches; extent of wings, 45; bill, along the back, $1\frac{1}{2}$; along the gap, from the tip of the lower mandible, $1\frac{1}{2}$; tarsus, $1\frac{3}{4}$." (Aud., as above.)

ADULT? Brownish-black, with a purplish lustre; occipital feathers white at base, and a few white feathers in front at the base of the bill. Under wing-coverts black, with cir-

cular spots and irregular bars of white. Quills white on their inner webs for about two-thirds of their length, and transversely barred with pale ashy-brown. Tail above brownish black, tinged with ashy, and with about six to eight bars of black, the widest of which is next to the tip, which is white. Inner webs of the tail-feathers, except the two in the middle, white, mottled with ashy, and with the transverse bars conspicuous; tail beneath ashy-white. Plumage of the back and entire under-parts of the body white at base, and having concealed pairs of circular and oval spots of white most obvious on the abdomen and under tail-coverts. Bill and legs light-colored.

DIMENSIONS. Total length (of skin), 20 inches; wing, $16\frac{1}{2}$; tail, $9\frac{1}{2}$ inches.

HAB. Louisiana (Audubon); Mexico? Spec. in Mus. Acad. Philada.

OBS. The only bird that we have ever seen which appeared to be this species is that described above as probably the adult. It is one of two or three species of black Buzzards which inhabit Mexico and Central America, and we suspect it of being identical with *B. albonotatus* (Gray, as above), though of that species there is no sufficient description published.

7. *BUTEO INSIGNATUS*. Cassin. *New species*. (March, 1854.) The Canada Buzzard.

Form robust; wings rather long, third quill longest, secondaries emarginate at their tips; quills unusually broad; tail rather short, slightly rounded; tarsi feathered in front below the joint, naked behind, and having in front about ten transverse scales. Under wing-coverts and under tail-coverts white, the former striped longitudinally with pale-ferruginous, and some of them transversely with dark-brown, the latter with transverse stripes of pale reddish-brown. Plumage of the tibiae dark-ferruginous mixed with brown. Throat and a few feathers in front white, with narrow lines of black. Entire other plumage above and below dark-brown, nearly every feather having a darker or nearly black line on its shaft. Quills above brown, with a purple lustre, beneath pale-ashy, with their shafts white, and irregularly barred with white near their bases. Tail above dark-brown, with an ashy or hoary tinge, and having about ten obscure bands of a darker shade of the same color, beneath nearly white, with conspicuous bands of brown, the widest of which is next to the tip, which is paler. Tarsi and feet yellow. Sex unknown.

DIMENSIONS. Total length (of skin), 17 inches; wing, $14\frac{1}{2}$; tail, $7\frac{1}{2}$ inches.

HAB. Canada (Dr. McCulloch). Spec. in Mus. Nat. Hist. Soc. of Montreal, Canada.

OBS. Of this very remarkable little Buzzard one specimen only has come under our notice, and is that above described. It belongs to the collection of the Natural History Society of Montreal, by whom it was most kindly sent to Philadelphia for examination at our request, through the good offices of M. McCulloch, M. D., a distinguished physician and naturalist of that city.

In color, though a true *Buteo*, this bird differs from any known American species, and more resembles in that respect some stages of the young plumage of *Circus hudsonius* or *C. æruginosus*. It was captured in the vicinity of Montreal.

II. GENUS ARCHIBUTEO. BREHM, *ISIS*, 1828, p. 1269.TRIORCHIS. KAUP, *SYST. EUR. THIER.*, p. 84. (1829.)BUTAETES. LESS., *TRAITE*, p. 83. (1831.)

General characters very similar to those of *Buteo*, but with the tarsus densely feathered to the base of the toes, but more or less naked on the hind part. Toes short; claws moderate; wings rather long. Contains about six species, of both continents.

1. ARCHIBUTEO SANCTI-JOHHANNIS. (Gmelin.) The Black Hawk. The Rough-legged Buzzard.

FALCO SANCTI-JOHHANNIS and NOVÆ-TERRÆ. Gm., *Syst. Nat.*, I. pp. 273, 274. (1788.)FALCO NIGER. Wils., *Am. Orn.*, VI. p. 82. (1812.)BUTEO ATER. Vieill., *Nouv. Dict.*, IV. p. 482. (1816.)FALCO SPADICEUS. Gm., *Syst. Nat.*, I. p. 273?

Wilson, *Am. Orn.*, VI. pl. 53, figs. 1, 2; *Faun. Bor. Am.*, Birds, pl. 28; *Aud., B. of Am.*, pl. 422, oct. ed. I. pl. 11.

Large, and rather heavy; wings long; tarsi feathered, a narrow space naked behind; toes naked, and rather short. ADULT. Entire plumage glossy black, in many specimens with a brown tinge; forehead, throat, and a large space on the head behind, mixed with white. Tail with one well-defined band of white, and irregularly marked towards the base with the same color. Quills with their inner webs white, most readily seen on the under-surface of the wing. Some specimens have several well-defined bands of white in the tail. Others have the entire plumage dark chocolate-brown, with the head more or less striped with yellowish-white and reddish-yellow. Cere and legs yellow.

YOUNGER. Upper-parts light umber-brown, with the feathers more or less edged with yellowish-white and reddish-yellow; abdomen with a broad transverse band of brownish-black; other under-parts pale yellowish-white, longitudinally striped on the neck and breast with brownish-black; wings and tail brown, tinged with cinereous; quills for the greater part of their length white on their inner webs; tail-feathers white at their bases. Plumage of the tibiae and tarsi pale reddish-yellow, spotted with brown. Other specimens have the throat and breast with the black color predominating.

YOUNG MALE? Entire upper-parts light ashy-brown, more or less mixed with white, especially on the head and fulvous; under-parts yellowish white and dark-brown, the latter assuming the form of longitudinal stripes on the breast, and narrow transverse stripes on the abdomen; tarsi and tibiae dark-brown, striped with dull-white and reddish; greater part of quills and tail white. Cere and legs yellow.

DIMENSIONS. Total length, *female*, 22 to 24 inches; wing, 17 to 17½; tail, 9 inches. *Male* — total length, about 20 to 21 inches; wing, 16 to 16½; tail, 8 to 8½ inches.

HAB. Entire North America; Oregon (Townsend). Spec. in Mus. Acad. Philada.

OBS. This is one of the most abundant of the birds of this family, in all the States on the Atlantic, and is one of the most variable in plumage. Two stages of plumage — the adult black bird and the young, when the wide abdominal band of black is well defined — are easily recognized; but there are a variety of other plumages which are difficult to refer to their proper age, sex,

or season. Although the stage of plumage described above as perhaps that of the young male (figured by Wilson, pl. 53, fig. 2, and Aud., pl. 422, fig. 2) may be correct, we regard it as by no means established, and in fact are inclined to suspect that there are two distinct species confounded.

2. *ARCHIBUTEO LAGOPUS*. (Gm.) The Rough-legged Buzzard.

FALCO LAGOPUS. Gmelin, Syst. Nat., I. p. 260. (1788.)

Wils., Am. Orn., IV. pl. 33, fig. 1; Aud., B. of Am., pl. 166; Gould, B. of Eur., I. pl. 15.

Very similar in general form to the preceding. Above light umber-brown; many feathers, especially of the head and neck behind, edged with yellowish white and fulvous. A wide transverse band or belt on the abdomen brownish-black; other under-parts yellowish-white, with a few longitudinal lines and spots of brownish-black; quills ashy-brown, with a large basal portion of their inner webs white; tail at its base white, which is also the color of the greater part of the inner webs of its feathers almost to the tip; terminal portion light umber-brown; tip white. Plumage of the tibiae and tarsi pale reddish-yellow, striped longitudinally with brown.

DIMENSIONS. *Female*—total length, 21 to 23 inches; wing, 16 to 17; tail, 9 inches. *Male*—smaller.

HAB. All of North America; Europe; California (Mr. Bell); Wisconsin (Dr. Hoy). Spec. in Mus. Acad. Philada.

OBS. The bird here inserted as identical with the European *Archibuteo lagopus* has been usually regarded, by late naturalists, as the young of the species immediately preceding. Such may be the truth of the case, and our only reason for giving it thus is, that after careful comparison and examination of numerous specimens, we find it absolutely impossible to distinguish it, by any character whatever, from the European bird. Whether two birds can be exactly the same in all their characters, so far as presented by specimens, and yet be distinct in species, is a question that we are not prepared at present practically to decide. We regard it as quite possible, however, that the present may be the young of *A. sancti-johannis*. It is one of the most common species of its family. Mr. Bell's specimens from California are, so far as we can see, exactly the same as the European bird, differing from eastern specimens only in very unimportant characters.

3. *ARCHIBUTEO FERRUGINEUS*. (Licht.) The Western Rough-legged Buzzard.

BUTEO FERRUGINEUS. Lichtenstein, Trans. Berlin Acad., 1838, p. 428.

ARCHIBUTEO REGALIS. Gray, Genera of Birds. I. pl. 6. (1849, plate only.)

Larger than either of the two preceding. Bill wide at base; wings long; tarsi feathered in front to the toes, naked and scaled behind. ADULT. Tibiæ and tarsi bright ferruginous, with transverse stripes of black, irregular and indistinct on the latter. Entire upper-parts striped longitudinally with dark-brown and light-rufous, the latter color predominating on the rump and lesser wing-coverts. Quills ashy-brown, lighter on their outer webs, and with the greater part of their inner webs white; tail above reddish-white, mottled with ashy-brown; tail beneath pure yellowish-white. Under-parts of the body white,

with narrow longitudinal lines and dashes on the breast of reddish-brown and narrow irregular transverse lines of the same color, and black on the abdomen; flanks and axillary feathers (under the wing) fine bright-ferruginous.

YOUNG. Entire upper-parts dark umber-brown, very slightly mixed with fulvous; upper tail-coverts white, spotted with brown; entire under-parts pure white, with a few narrow longitudinal lines and dashes of brown on the breast, and arrow-heads of the same color on the sides and abdomen, larger and more numerous on the flanks; tibiæ white; tarsi dark-brown, mixed with white; under wing-coverts and edges of wings white.

DIMENSIONS. *Female*—total length, about 23 to 25 inches; wing, 17 to $17\frac{1}{2}$; tail, 9 inches. *Young*—smaller.

HAB. California (Mr. E. M. Kern); Sacramento valley (Dr. Heermann). Spec. in Mus. Acad., Philada.

Obs. This is one of the handsomest of the American Falconidæ. It is also one of the largest of the Buzzards, and easily distinguished from the preceding species. Of the recent American travellers, Mr. E. M. Kern was the first who brought home this fine species; since which adults, young birds, and eggs, have been collected by Dr. Heermann. It is not rare in California.

IV. SUB-FAMILY MILVINÆ. THE KITES.

Size various, usually medium or small. Bill short, weak, hooked, and acute; wings and tail usually long; tarsi and feet slender, frequently short. The birds of this sub-family habitually feed on reptiles and other small animals, and are deficient in the strength and courage of those of the other sub-families. About thirty-five species of all countries belong to this group.

I. GENUS NAUCLERUS. VIGORS, ZOOL. JOUR., II. p. 386. (1825.)

CHELIDOPTERYX. KAFF. CLASS., p. 112. (1844.)

Bill short and weak; wings and tail very long, the former pointed, the latter deeply forked. Tarsi very short; toes short. Contains not more than three species, two of which are American, and the other African.

1. NAUCLERUS FURCATUS. (Linn.) The Swallow-tailed Hawk.

FALCO FURCATUS. Linn., Syst. Nat., I. p. 129. (1766.)

Cat. Car., pl. 4; Buff., Pl. Enl., 72; Wilson, Am. Orn., VI., pl. 51, fig. 3; Aud., B. of Am., pl. 72, oct. ed. I. pl. 18; Gould, B. of Eur., I. pl. 30; De Kay, Nat. Hist. N. Y., Birds, pl. 7, fig. 15.

Wings and tail long, the latter deeply forked. Head and neck, inferior wing-coverts, secondary quills at their bases, and entire under-parts, white. Back, wings, and tail, black, with a metallic lustre, purple on the back and lesser wing-coverts, green and blue on other parts. Tarsi and feet greenish-blue; bill horn color.

DIMENSIONS. *Female*—total length, 23 to 25 inches; wing, 16 to $17\frac{1}{2}$; tail, 14 inches. *Male*—rather smaller.

HAB. Southern States on the Atlantic, and centrally northward to Wisconsin; Texas (Mr. Audubon); South Carolina (Prof. Gibbs); Wisconsin (Dr. Hoy); Pennsylvania (Mr. A. F. Darley); Jamaica (Mr. Gosse). Accidental in Europe. Spec. in Mus. Acad., Philada.

OBS. This very handsome Hawk is especially abundant in the Southern States. It cannot readily be confounded with any other North American species, though we have not been able to compare it with the *Elanoides yetapa*, Vieill., of South America, with which it is either identical or very similar.

II. GENUS ELANUS. SAVIGNY, NAT. HIST. EGYPT, I., 97. (1809.)

Bill short, compressed, hooked; wings long, pointed; tail moderate, generally emarginate; tarsi short. Contains four species only, much resembling each other; one of which is American, one African, and two Australian.

1. ELANUS LEUCURUS. (Vieill.) The Black-shouldered Hawk. The White-tailed Hawk.

MILVUS LEUCURUS. Vieill., Nouv. Dict., XX. p. 563. (1818.)

FALCO DISPAR. Temm., Pl. Col., I. (Liv. 54, about 1824.)

"FALCO MELANOPTERUS. Daud." Bonap., Jour. Acad. Philada., V. p. 28.

"FALCO DISPAR. Temm." Aud., Orn. Biog., IV. p. 367.

Bonap., Am. Orn., II. pl. 11, fig. 1; Temm., Pl. col. 319; Aud., B. of Am., pl. 352, oct. ed. I. pl. 16. Gay's Chili Orn., pl. 2.

Head above, entire under-parts, and tail, white, the middle-feathers of the latter usually tinged above with ashy, and the head posteriorly tinged with the same color, which gradually shades into a fine light-cinereous, which is the color of the upper-parts of the body, quills, and greater wing-coverts. Lesser wing-coverts glossy black, which forms a large oblong patch; inferior wing-coverts white, with a smaller black patch. Bill dark; tarsi and feet yellow.

DIMENSIONS. *Female*—total length, 15½ to 17 inches; wing, 12; tail, 7½ inches. *Male*—smaller.

HAB. Southern States; California (Dr. Heermann); South Carolina (Prof. Gibbs); Chili (Lieut. Gillis). Spec. in Mus. Acad., Philada.

OBS. An abundant species in the Southern and South-western States. It is larger than the African *E. melanopterus*, with which it has been confounded, but considerably resembling it and the Australian species in form and general characters.

III. GENUS ICTINIA. VIEILL., ANALYSE, p. 24. (1816.)

NERTUS. BOIE, ISIS, 1828, p. 314.

PŒCIOPTERYX. KAUP, CLASS., p. 112. (1844.)

Bill short, tip emarginated; wings long, pointed; tail rather short; usually emarginated; tarsi short. Two American species constitute this genus.

1. ICTINIA MISSISSIPPIENSIS. (Wilson.) The Mississippi Kite.

FALCO MISSISSIPPIENSIS. Wilson, Am. Orn., III. p. 80. (1811.)

FALCO OPHIOPHAGUS. Vieill., Nouv. Dict., XI. p. 103. (1817.)

"ICTINIA PLUMBEA. Gm." Aud., Orn. Biog., II. p. 108.

Vieill., Gal., I. pl. 17; Wilson, Am. Orn., III. pl. 25, fig. 1; Aud., B. of Am. pl. 117, oct. ed. I. pl. 17.

Head, exposed ends of secondary quills, and entire under-parts, light-cinereous, palest and nearly white on the tips of the secondaries. Back, wing-coverts, and rump dark lead-color; primaries and tail brownish-black, the latter with a tinge of bluish. Bill dark; tarsi and feet lighter.

DIMENSIONS. Total length, *female*, about 15 inches; wing, 11 to 11½; tail, 6½ inches. *Male* — smaller.

HAB. Southern States; Texas (Mr. Audubon); South Carolina (Prof. Gibbs). Spec. in Mus. Acad., Philada.

OBS. This bird is quite different from the South American *I. plumbea*, for which it has been mistaken by American naturalists; in fact, it is so little like it, that a comparison of specimens of the two species would render a suspicion of their identity quite impossible.

IV. GENUS ROSTRHAMUS. LESSON, TRAITE D'ORN., I. p. 55. (1831.)

Bill long, very slender, hooked, and sharp at the tip; wings long, pointed; tail rather long, emarginate; tarsi and toes rather long; claws very long, slender, acute. The present is the only species.

1. ROSTRHAMUS SOCIABILIS. (Vieill.) The Hooked-billed Hawk.

HERPETOTHERES SOCIABILIS. Vieill., Nouv. Dict., XVIII. p. 318. (1817.)

CYMINDIS LEUCOPYGIUS. Spix, Av. Bras., I. p. 7. (1824.)

ROSTRHAMUS NIGER. Less., Traite, I. p. 56. (1831.)

"FALCO HAMATUS. Illiger." Lesson, as above.

Temm., Pl. col. I. 61, 231; Spix, Av. Bras., I. pl. 2; Guerin, Mag. de Zool., 1834, pl. 20.

ADULT. Tail at base, and under tail-coverts, white; all other parts black. Naked space before the eye yellow, which is also the color of the feet; bill and claws black. Tail usually tipped with pale-cinereous. YOUNGER. Throat and line over and behind the eye yellowish-white; general plumage brownish-black, mixed with yellowish-white on the under-parts of the body. YOUNG. Forehead — stripe behind the eye and throat reddish or ferruginous-white; upper-parts brown, many feathers edged with pale-ferruginous; under-parts yellowish, with longitudinal stripes of black; tail at tip and base, and under tail-coverts, yellowish-white. Legs yellowish-green.

DIMENSIONS. *Female* — total length (of skin), 16 inches; wing, 14; tail, 7½ inches. *Male* — smaller.

HAB. Florida (Mr. Harris, Dr. Heermann). Spec. in Mus. Acad., Philada.

OBS. This bird is remarkable for its slender and hooked bill, unlike that of any other Falcon. It is well known as a South American bird, and was first noticed in Florida by Mr. Edward Harris; subsequently by Dr. Heermann. Both these gentlemen having obtained specimens of young birds, it is probably a constant resident of that State.

V. GENUS *CIRCUS*. LACEPEDE, MEM. D'INST., III. p. 506. (1803.)

STRIGICEPS. BONAP., COMP. LIST., p. 5. (1838.)

Size medium; head rather large; face partially encircled by a ring or ruff of short projecting feathers (as in the Owls). Bill rather short, compressed, curved from the base; nostrils large; wings long, pointed; tail long, wide; tarsi long and slender, compressed; toes moderate; claws long, rather slender. Embraces about fifteen species, of all parts of the world.

1. *CIRCUS HUDSONIUS*. (Linn.) The Marsh Hawk. The Harrier.

FALCO HUDSONIUS. Linn., Syst. Nat., I. p. 128. (1766.)

FALCO ULIGINOSUS. Gm., Syst. Nat., I. p. 278. (1788.)

FALCO EUROPOGISTUS. Daudin, Traite, II. p. 110. (1800.)

"FALCO ULIGINOSUS." Wilson, Am. Orn., VI. p. 67.

"FALCO CYANEUS. Linn." Aud., Orn. Biog., IV. p. 396.

Edw., Birds, VI. pl. 291; Vieill., Ois. d'Am., pl. 9; Wilson, Am. Orn., VI. pl. 51, fig. 2; Bonap., Am. Orn., II. pl. 12; Aud., B. of Am., pl. 356, oct. ed. I. pl. 26; Faun. Bor. Am., Birds, pl. 29; De Kay, Nat. Hist. N. Y. Orn., pl. 3, figs. 6, 7.

Form slender; tarsi long; ruff very distinct on the neck in front. ADULT. Upper-parts, head, and breast, pale grayish-cinereous, generally more or less tinged with fuscous, and on the back of the head mixed with dark fulvous; upper tail-coverts white. Under-parts white, usually with many small cordate or hastate spots of light-ferruginous; quills brownish-black, with their outer webs tinged with ashy, and a large portion of their inner webs white; tail light-cinereous, nearly white on the inner webs of the feathers, and with obscure bands of brown; under-surface white; inferior wing-coverts white; secondaries tipped with dark-brown. YOUNG. Entire upper-parts dark umber-brown, mixed with fulvous, and white on the occiput and neck behind; upper tail-coverts white. Tail reddish-brown, with about three broad bands of dark-fulvous, paler on their inner webs. Under-parts rufous, with stripes of brown on the breast and sides; tarsi and feet yellow. In younger birds, on the under-parts the brown stripes are more numerous.

DIMENSIONS. *Female*—total length, $19\frac{1}{2}$ to 21 inches; wing, $15\frac{1}{2}$; tail, 10 inches. *Male*—total length, 16 to 18 inches; wing, about 14; tail $8\frac{1}{2}$ to 9 inches.

HAB. All of North America; California (Col. McCall); Oregon (U. S. Exp. Vincennes); Cuba (M. de Sagra, M. Lembeze). Spec. in Mus. Acad., Philada.

OBS. Resembles to some extent the *Circus cyaneus* of Europe, but is easily distinguished from it by its colors and rather larger size. The adults and young of this species present great differences in color and general appearance.

V. SUB-FAMILY AQUILINÆ. THE EAGLES.

Size usually large. Bill large, compressed, straight at base, curved and acute at the tip; wings long, pointed; tail ample, generally rounded at the end; tarsi moderate or rather long, strong; toes long, strong; claws very strong, curved, acute. This sub-family includes about seventy species, of all countries.

GENUS AQUILA. MÖHRING, AV. GEN. p. 40. (1752.)

Large, bill large, strong, compressed, and hooked at the tip; wing long, pointed, very strong; tarsi moderate, feathered to the base of the toes. Tail rather long, rounded or wedge-shaped; toes and claws long; the latter very sharp and curved. Contains about twenty species, which are regarded as the true Eagles.

1. AQUILA CHRYSÆTOS. (Linn.) The Golden Eagle. The ring-tailed Eagle.
 FALCO CHRYSÆTOS and FULVUS. Linn., Syst. Nat., I. p. 125. (1766.)
 FALCO CANADENSIS. Linn., Syst. Nat., I. p. 125. (1766.)
 AQUILA NOBILIS. Pallas, Zoog. Ross. As., I. p. 338. (1811.)
 FALCO NIGER. Gm., Syst. Nat., I. p. 259. (1788.)?

Edw., Birds, pl. 1; Brown, Ill., pl. 2; Buff. Pl. Enl. 409, 410; Wils. Am. Orn., pl. 55, fig. 1; Aud. B. of Am., pl. 181; oct. ed. 1, pl. 12.

Very large; tarsi densely feathered to the toes. ADULT. Head above and behind and neck behind light-brownish fulvous, much varying in shade in different specimens. Base of the tail pure white, which color varies in extent in different specimens, but generally occupies the greater part of the tail; remaining portion glossy black. All other parts rich purplish-brown, very dark, and nearly black on the under-surface. Primary quills shining black, secondaries purplish-brown, with a violet tinge; tibia and tarsi brownish-fulvous, tinged with ashy; toes yellow. YOUNGER. Entire plumage mixed with fulvous, and with the under-surface of the body paler.

DIMENSIONS. *Female* — total length, 33 to 40 inches; wing, about 25; tail, about 15 inches. *Male* — smaller.

HAB. Whole of North America; Oregon (Dr. Townsend). Spec. in Mus. Acad., Philada.

Obs. We are not without doubts as to the specific identity of the American and the European Golden Eagles. All the American specimens that we have examined are smaller, the bill shorter, and the plumage much darker than those of Europe. We have not at present, however, a sufficient number of either continent, and it unfortunately happens that nearly all our European specimens are young birds, while the American are adults. Mr. Audubon's plate represents this bird in nearly mature plumage.

II. GENUS HALIAETUS. SAVIGNY, HIST. NAT. D'EGYPT, I. p. 85. (1809.)

Size large; tarsi short, naked, or feathered for a short distance below the joint of the tibia and tarsi, and with the toes covered with scales. Bill large, strong, compressed; margin of upper mandible slightly festooned; wings rather long-pointed; tail moderate; toes rather long; claws very strong, curved, sharp. This genus contains about ten species of all parts of the world, all of which prey more or less on fishes, and are known as Fishing or Sea Eagles.

1. *Haliaetus pelagicus*. (Pallas.) The Northern Sea Eagle.
Aquila pelagica. Pallas, *Zoog. Rosso-Asiat.*, I. p. 343. (1811.)
 " *Aquila marina*. Steller, MSS." Pallas as above.
Falco imperator. Kittlitz., *Kupf. Nat. Vog.*, pt. I. p. 3. (1832.)
Falco leucopterus. Temm., *Pl. col.* I. p. (no page.)

Kittlitz *Kupf.*, pl. 2; Temm., *Pl. col.* I., pl. 489. Cassin. *B. of California and Texas*, I., pl. 6.

The largest of the Eagles. Wings rather shorter than usual in this genus; tail wedge-shaped, and composed of fourteen feathers. ADULT. Large frontal space, greater wing-coverts, abdomen and tail white; all other parts of the plumage dark brown or brownish-black; bill and legs yellow. YOUNGER. Tail white, more or less marked with brownish-black. All other parts brownish-black, lighter on the head and neck. Quills black, secondaries and tertiaries white at their bases; bill and feet yellow.

DIMENSIONS. *Female*—total length, 3 feet 8 inches; wing, 2 feet 2 in.; tail, 1 foot 4 inches.

HAB. Russian-American Islands (Pallas); Japan (Temminck & Schegel). Spec. in Mus. Acad., Philada.

OBS. This very large and powerful bird inhabits north-eastern Asia and the islands between that continent and America, and probably other parts of Russian-America. It is the largest of the Eagles, and appears to be related to the species immediately succeeding.

2. *Haliaetus washingtonii*. (Aud.) The Washington Eagle.
Falco washingtonii. Aud. *Orn. Biog.*, I. p. 58. (1831, plate pub. 1827.)
Falco washingtoniana. Aud. *Louden's Mag.*, I. p. 115. (April, 1828.)

Aud. *B. of Am.* pl. 11; oct. ed. I., pl. 13.

Large, "bill shortish, very deep, compressed; feet rather short, with the leg long; the tarsus short, rounded, anteriorly covered with transversely-narrow sentella, posteriorly with small tuberculous scales; feathers of the head, neck and breast narrow and pointed; wings long, second quill longest; tail of ordinary length, rounded, extending considerably beyond the tips of the wings, of twelve broad acute feathers."

"Bill bluish-black, the edges pale, the soft margin towards the commissure, and the base of the under-mandible yellow; cere yellowish-brown; lore light greenish-blue; iris chestnut-brown; feet deep yellow; claws brownish-black; upper part of the head, hind neck, back, scapulars, rump, tail-coverts and posterior tibial feathers blackish-brown, glossed with a coppery tint; throat, fore-neck, breast and belly light brownish-yellow, each feather marked along the centre with blackish-brown; wing-coverts light grayish-brown, those next the body becoming darker and approaching the color of the back; primary quills dark-brown, deeper on their inner-webs; secondaries lighter, and on their outer-webs of nearly the same tint as their coverts; tail uniform dark-brown; anterior tibial feathers grayish-brown."

DIMENSIONS. "Length, 3 feet 7 inches; extent of wings, 10 feet 2 inches; bill, $3\frac{1}{4}$ inches along the back; along the gap which commences directly under the eye to the tip of the lower mandible, $3\frac{1}{2}$ and $1\frac{3}{4}$ deep; length of wing when folded, 32 inches; length of tail, 15 inches; tarsus, $4\frac{1}{2}$; middle toe, $4\frac{3}{4}$; hind claw, $2\frac{1}{2}$ inches." Audubon as above.

HAB. Kentucky (Audubon); Western and Eastern? Spec. in Mus. Acad., Philada.?

OBS. The above description we regard as that of the young bird, and consider the adult as yet unknown. No specimen precisely corresponding to Mr. Audubon's bird, has been obtained since its discovery, and it has latterly been looked upon by Naturalists, especially in Europe, as an unusually large specimen of the young white-headed Eagle. It is probably a western species, and would be readily recognized by the transverse scutellæ of the tarsi which are continued to the base of the toes.

3. *HALIAETUS ALBICILLA*. (Linn.) The Gray Sea Eagle. The European Sea Eagle.

VULTUR ALBICILLA. Linn., Syst. Nat., I. p. 123. (1766.)

FALCO OSSIFRAGA ET MELANAETOS. Linn., Syst. Nat., I. p. 124. (1766.)

HALIAETUS GRŒNLANDICUS. Brehm, Vog. Deuts., I. p. 16. (1831.)

Buff., Pl. Enl., 112, 415; Selby, Ill. Brit. Orn., pl. 3; Gould, B. of Eur., I. pl. 10.

Large, bill large, much hooked; wings long; tail moderate. ADULT. Tail white; head and neck pale yellowish-brown, in some specimens very light; all other parts of the plumage dark umber-brown; quills nearly black; bill, feet and irides yellow. YOUNGER. Bill brownish-black; irides brown; entire plumage dark-brown, with the tail mottled with white, much varying in extent; throat paler, and in some specimens nearly white.

DIMENSIONS. *Female* — total length, about 3 feet to 40 inches; wing, 2 feet 3 inches; tail, 1 foot. *Male* — smaller.

IIAB. Greenland (Fabricius, Holboll). Spec. in Mus. Acad., Philada.

OBS. This Eagle, which is common in Europe, and breeds in cliffs on the sea-shore, we give as an inhabitant of Greenland. We have to say, however, that the only specimen from that country which we have ever seen, and which is a young bird, presents considerable variations from European specimens, and we consider it quite possible that Dr. Brehm is right in giving it specific distinction. The young of this bird resembles that of the succeeding species (*H. leucocephalus*), and the most readily-detected difference is its larger size and longer tarsi. The adults are, however, entirely dissimilar.

4. *HALIAETUS LEUCOCEPHALUS*. (Linn.) The Bald Eagle. The White-headed Eagle.

FALCO LEUCOCEPHALUS. Linn., Syst. Nat., I. p. 124. (1766.)

FALCO PYGARGUS. Daud., Traite, II. p. 62. (1800.)

FALCO OSSIFRAGUS. Wilson, Am. Orn., VII. p. 16. (1813.)

Cat. Car., I. pl. 1; Buff., Pl. Enl., 411; Vieill., Ois. d'Am., Sept., I. pl. 3; Wils., Am. Orn., IV. pl. 36; VII. pl. 55; Aud., B. of Am., pl. 31, 126; oct. ed., I. pl. 14.

Large, but smaller than either of the preceding Eagles; bill large, strong, much hooked and sharp; wings long; tail moderate; tarsi rather short. ADULT. Head, tail and its upper and under coverts white; entire other plumage brownish-black, in some specimens with the edges of the feathers paler; bill, feet and irides yellow. YOUNGER. Entire plumage dark brown; throat paler; abdomen frequently with fulvous edgings on many feathers; bill brownish-black; iris brown; tail more or less mottled with white, which color in a more advanced stage extends over a large portion of the tail, especially on the inner webs of the feathers.

DIMENSIONS. *Female* — total length, about 3 feet; wing, about 23 inches; tail, about 14 inches. *Male* — smaller.

HAB. All of North America; Oregon (Townsend); Florida (Bartram); Accidental in Europe. Spec. in Mus. Acad., Philada.

OBS. This handsome bird, which has had the honor of being adopted as the emblem of the United States, inhabits the whole of North America. It is very easily recognized when adult, and the young is not readily mistaken for that of any other American species except the immediately preceding.

III. GENUS PANDION. SAVIGNY, NAT. HIST. EGYPT, I. p. 95. (1809.)

Bill short, curved from the base, hooked, compressed; wings very long; tarsi short, very thick and strong, and covered with small circular scales; claws large, curved very sharp; tail moderate. Contains about three or four species nearly allied, inhabiting various parts of the world.

1. PANDION CAROLINENSIS. (Gen.) The Fish Hawk. The Osprey,
 FALCO CAROLINENSIS. Gm., Syst. Nat., I. 263. (1788.)
 AQUILA PISCATRIX. Vieill., Ois. d'Am. Sept., I. p. 29. (1807.)
 PANDION AMERICANUS. Vieill., Gal., I. p. 33. (1825.)

Vieill., Ois. d'Am. Sept., I. pl. 4; Cat. Car., I. pl. 2; Wilson, Am. Orn., V. pl. 37; Aud., B. of Am., pl. 81; oct. ed., I. pl. 15; Nat. Hist. N. Y. Birds, pl. 8, fig. 18.

Legs, feet and claws very strong. ADULT. Head and entire under-parts white; wide stripe through the eye downwards, longitudinal stripe on the top of the head and occiput and entire upper parts of the body, wings and tail, deep umber-brown, generally with the feathers more or less edged with lighter brown; tail with about eight bands of blackish-brown, and with the greater parts of the inner-webs of its feathers white; breast with numerous cordate and circular spots of pale yellowish-brown; bill and claws bluish-black; tarsi and toes greenish-yellow. YOUNG. Similar to the adult, but with the upper plumage edged and tipped with pale-brownish, nearly white.

DIMENSIONS. *Female* — total length (of skin), about 25 inches; wing, $21\frac{1}{2}$; tail, $10\frac{1}{2}$ inches. *Male* — smaller.

HAB. Throughout North America; Texas (Woodhouse); Oregon (U. S. Ex. Exp. Vincennes). Spec. in Mus. Acad., Philada.

OBS. The American Osprey is very similar to that of the old continent (*P. haliaetus*), and specimens from Western America even more intimately resemble it. It is, however, larger, and retains in all the specimens that we have seen, differently-formed spots on the breast, being heart-shaped and circular, instead of narrow and lanceolate, as in the European species. The Fish Hawk is abundant on the sea-coasts of the United States, and is one of the few rapacious birds of this country which are not molested.

IV. GENUS POLYBORUS. VIEILLOT, ANALYSE, p. 22. (1816.)

CARACARA. CUV. REG. AN., p. 316. (1817.)

Size smaller than the preceding; bill long, compressed, wide laterally; cere large; wings long, pointed; tail moderate, or rather long; tarsi long,

rather slender, covered in front with large hexagonal and irregular scales, and laterally and horizontally with smaller; claws long, slightly curved, rather weak; space in front of and below the eye naked. Two species only form this genus, both of which are abundant birds of South and Central America.

1. *POLYBORUS THARUS*. (Molina.) The Caracara Eagle. The Mexican Eagle.

FALCO THARUS. Molina, Sagg. Stor. Nat. del Chili. (1782.)

FALCO CHERIWAY. Jacquin, Beytr. Gesch. der Vogel, p. 17. (1784.)

FALCO BRASILIENSIS. Gmelin, Syst. Nat., I. p. 262. (1788.)

FALCO PLANCUS. Miller, Cimelia Physica.

POLYBORUS VULGARIS. Vieill., Nouv. Dict., V. p. 257. (1816.)

Jacq. Vog., pl. 4; Miller & Shaw, Cim. Phys., 2d ed., pl. 17; Vieill., Gal., I. pl. 7; Spix., B. of Bras., I. pl. 1, *a*; Aud., B. of Am., pl. 161; oct. ed., I. pl. 4; Swains. Zool. Ill., I. pl. 2; Gay's Chili Orn., pl. 1.

Legs long; occipital feathers somewhat elongated. *Adult*. Head above, back, rump, wings, broad abdominal belt and tibiae brownish-black; neck before and behind, sides of the head behind the eye, breast, upper and under tail-coverts yellowish-white; on the breast and neck behind finely barred transversely with black; tail for about two-thirds of its length white, with numerous narrow bars of black, and widely tipped with black; bill at base bluish; tip yellowish-white; tarsi and toes yellow. *Younger*. Head above dark-brown; other upper parts pale-brown, with paler edgings to many feathers; underparts dark-brown, nearly all the feathers having longitudinal central stripes of dull white; throat yellowish-white; tail for the greater part and its coverts above and below white, with numerous transverse bands of pale ashy-brown, and tipped with brownish-black.

DIMENSIONS. *Female*—total length (of skin), about 26 inches; wing, 17; tail, 10 inches. *Male*—larger?

HAB. Southern North America; Florida (Audubon); Texas; Mexico (McCall). Abundant in South America. Spec. in Mus. Acad., Philada.

OBS. The Caracara Eagle has been observed in Florida, and is an inhabitant also of Texas and Mexico. It walks on the ground with facility, and otherwise resembles the Vultures in its habits; and, like them, lives on dead animals for the greater part. The original edition of Molina, in which a scientific name is given to this bird for the first time since the adoption of the binomial nomenclature, we have not seen; but in his second edition, Preface, p. 1 (Bologna, 1810), it is stated to have been published in 1782. His name undoubtedly has priority.

We are inclined to the opinion that this bird, and several more or less nearly allied species of South America, belong properly to the family of Vultures;—of all the habits of which they partake. This opinion is supported somewhat by Molina's statement, that of the present species the female is the smaller (2d ed., p. 221), as Humboldt and others have observed of the Condor, and as appears to be the case in the family of Vultures, but not in that of the Falcons.

V. GENUS MORPHNUS. CUVIER, REGNE. ANIMAL, I. p. 317. (1817.)

URUBITINGA. LESS., REV. ZOOL., 1839, p. 132.

SPIZOGERANUS. KAUP, CLASS., p. 120. (1844.)

Size medium; bill rather long, abruptly curved at the tip, which is acute; edges of upper mandible festooned; wings and tail long; legs long; tarsi and toes strong, the former with wide transverse scales in front; claws strong. A genus of American species, inhabiting the southern portion of the continent.

1. MORPHNUS UNICINCTUS. (Temm.) Harris' Buzzard.

FALCO UNICINCTUS. Temm., Pl. col., I. p. (no page—livraison 53, about 1827.)

"FALCO ANTHRACINUS. Licht." Gray, Genera, I. p. 27.

BUTEO HARRISII. Aud., Orn. Biog., V. p. 30. (1839.)

POLYBORUS TENIURUS. Tschudy, Wiegmann Archiv., X. p. 263. (1844.)

Temm., Pl. col., 313; Aud., B. of Am., pl. 392: oct. ed., I. pl. 5; Tschudy, Fauna Peruana Orn., pl. 1.

Legs long, and with the feet robust; wings rather short; tail long. ADULT. Shoulders, wing-coverts and tibiae chesnut-red or bay; other parts very dark umber-brown; upper and under tail-coverts white; tail white at its base, and tipped with white; middle portion presenting the appearance of a very wide band, dark brownish-black, with a reddish or violet tinge. YOUNGER. Upper-parts umber-brown, much mixed with fulvous; shoulders chesnut-red, with dark-brown spots; quills dark-brown; secondaries tipped with yellowish-white; entire under-parts yellowish-white, many feathers on the breast, sides and abdomen, with large oblong and circular spots of brown; tibiae yellowish-white, with transverse irregular lines of light brownish-red; upper and under tail-coverts white; tail brown, with many bands of a deeper shade of the same color, and with the inner-webs yellowish and reddish-white, and having many narrow bands of dark-brown; base and tip of the tail yellowish-white.

DIMENSIONS. *Female*—total length, 22 to 24 inches; wing, 15; tail, 10 inches. *Young male*—total length, 20 inches; wing, 13; tail, 9½ inches.

HAB. Southern States; Mexico, abundant; Texas, frequent (Col. McCall); Mississippi, rare (Dr. Jenkins); Peru; Chili (Lieut. Gilliss); Chili, abundant (Gay, Fauna Chilena). Spec. in Mus. Acad., Philada.

OBS. Col. McCall, who has seen this bird in large numbers in Texas, represents it as habitually frequenting the ground in the vicinity of water, and especially abundant on both sides of the Rio Grande. It is slow and heavy in flight, and a dull, sluggish bird in all its habits, partaking in these respects of the general characters of the Vultures.

The affinities of this species we regard at present as uncertain, and arrange it provisionally only in the present genus and sub-family, but by no means agreeing in our views with late European ornithologists.

The foregoing are all the birds of this family which can be regarded as well-established species inhabiting that portion of North America, within our prescribed limits.

Respecting their history, one of the most important questions to the naturalist is, the change of plumage from young to mature age, and another change which takes place in assuming their spring or summer and their winter liveries. The latter change is by no means well understood in many species, and to ascertain it completely in any one would yet be an interesting contribution to its history.

A few species are known only as of exceedingly rare occurrence in the United States, but the larger number are sufficiently numerous to be investigated without difficulty. Of the former, the Washington Eagle (*Haliaetus Washingtonii*), Harlan's Buzzard (*Buteo Harlani*), the Black Hawk, the Rough-legged Hawk (*Archibuteo sancti johannis* and *lagopus*, and nearly all the Western species, may be regarded as particularly requiring further research.

In the winter season, various species resort to the sea-coast, and others to the margins of bays and rivers in considerable numbers. In the vicinity of the cities these have, however, greatly diminished since the introduction of steamboats and railroads. Steam-engines, and especially locomotives, are innovations for which the Eagles and Hawks evidently have no fancy. To the markets appropriated to the accommodation of farmers and traders from the rural districts in all the cities on the Atlantic seaboard, specimens are frequently brought for sale, a demand, reliable to some extent, having arisen from collectors and amateurs.

Occasionally an immense multitude of Hawks soaring high in the air, and in company, has been observed. This curious phenomenon has been seen by our friends, Professor Baird, of the Smithsonian Institution, Washington city; Dr. Hoy, of Racine, Wisconsin; and by ourselves. It occurs in autumn, and is probably incidental to migration; but its exact character and object is unknown, and involves an interesting inquiry. It is necessarily temporary, as the procuring of suitable food by such a large number of rapacious birds would be impossible.

In the western and northern regions of North America, the birds of this family are particularly worthy of the attention of the traveller and naturalist, and would undoubtedly well repay him in the discovery of unknown species. This is the case also in the States of Florida and Texas, to the latter of which, very probably, some of the many Mexican species are visitors, that have not yet been noticed.

In Oregon and Russian-America, there are also very probably species which have not been recognized as inhabitants of this continent, though well known as birds of Northern Asia, and others entirely unknown to naturalists.

B.

Doubtful and obscure species which have been described as inhabiting North America.

1. *FALCO AMERICANUS*. Gm., Syst. Nat., I. p. 257. (1788.) The Black-cheeked Eagle. Pennant, Arctic Zoology, I. p. 227.

"With a dusky and blue-bill; yellow cere; head, neck and breast of a deep ash-color, each cheek marked with a broad black bar passing from the corner of the mouth beyond the eyes; back, belly, wings, and tail, black; legs yellow; feathered below the knees. Is about the size of the last (the Golden Eagle) North America." (Pennant, as above.)

Of this bird, Gmelin gives a short abstract of Pennant's description, and applies a scientific name. Naturalists relying solely on that abstract, have erroneously considered the species meant as the Golden Eagle (*A. chrysactes*), and the name *Falco americanus* has accordingly been usually quoted as a synonyme. Though "feathered below the knees" is somewhat indefinite, yet, taken in connexion with "legs yellow," it is clear that this cannot be the Golden Eagle, which has the tarsus densely feathered. There is no North American species known to which the original description applies.

2. *FALCO CANDIDUS*. Gm., Syst. Nat., I. p. 258. (1788.) The Louisiana White Eagle. Lath., Syn., I. p. 36. Du Pratz, Hist. Louisiane, II. p. 109.

FALCO CONCILIATOR. Shaw, Gen. Zool. Aves., VII. p. 77. (1809.)

White; tips of the wings black. Smaller than the Golden Eagle.

This bird is represented by Du Pratz as held in high estimation by the aborigines of Louisiana, who used its feathers for ornamenting the calumet or symbol of peace. It may have been an albino of a known species, or distinct and now unknown. The description applies to a beautiful Mexican species, *Buteo Ghiesbretii* (Dubus), which is about the size of the Red-tailed Hawk (*B. borealis*), and should it ever be observed in Louisiana, the question may be considered as settled.

3. *FALCO VARIEGATUS*. Gm., Syst. Nat., I. p. 267. (1788.) The Speckled Buzzard. Lath., Syn., I. p. 97.

"Length more than 12 inches; in shape like our common buzzard. The bill is dusky; the whole head and neck as far as the shoulders whitish; the shaft of each feather blotched irregularly with rusty-brown; back and wing-coverts brown, several of the feathers, especially on the wing-coverts, are spotted with white; tail dark brown, crossed with several bars; but these are nearly obsolete, appearing on close inspection; the quills are very dark, almost black; the under parts from the breast are white; down the shaft of each feather is a blotch of brown; these marks spread out larger and broader as they proceed downwards to the belly; thighs pretty much the same; vent plain white; legs yellow; claws black. A fine specimen of this bird is in the Leverian Museum, which came from North America." (Latham, as above.)

Generally cited as a synonyme for the Marsh Hawk, *Circus hudsonius*, with, as we think, but a small degree of propriety. It appears to us to be the young of either *Buteo pennsylvanicus* or *Accipiter cooperii*, or an unknown bird.

4. *FALCO ALBIDUS*. Gm., Syst. Nat., I. p. 267. (1788.) The Buzzardet. Penn., Arct. Zool., I. p. 245.

“With dusky bill; head, cheeks, neck, breast and belly white, marked with large brown spots more sparingly dispersed over the breast and belly; lesser coverts brown; the others colored like the head; primaries dusky; thighs white, with small sagittal spots of brown; tail dusky, barred and tipped with white; legs yellow. Length, 15 inches. It has much the habit of the Buzzard, but the legs in proportion are rather longer. In the Leverian Museum. Except in the almost uniform color of the tail, Mr. Latham’s species, p. 97, No. 83, agrees with this (which is the preceding *F. variegatus*). North America.” (Pennant, as above.)

Probably the same as the preceding.

5. *FALCO OBSOLETUS*. Gm., Syst. Nat., I. p. 268. (1788.) The plain Falcon. Penn., Arct. Zool., I. p. 242.

“Bill black; head dusky; nape spotted with white; back and coverts of the wings and tail of an uniform deep brown; under-side of the neck, breast, belly and thighs deep brown, slightly spotted with white; primaries dusky; inner webs marked with great oval spots of white, mottled with brown; middle feathers of the tail plain brown; inner webs of the rest mottled with white; exterior webs and ends slightly edged with the same; legs strong; wing reaches near the length of the tail. Length, from bill to tail, 2 feet 1 inch. Inhabits Hudson’s Bay.” (Pennant, as above.)

We are acquainted with no bird to which this description and measurement apply.

6. *FALCO SPADICEUS*. Gm., Syst. Nat., I. p. 273. (1788.) The Chocolate-colored Falcon. Penn., Arctic Zool., I. p. 234, pl. 9.

“With a short and black bill, and yellow cere. The whole plumage of a deep bay or chocolate color, in parts tinged with ferruginous; primaries black; the lower exterior sides of a pure white, forming a conspicuous spot or speculum; the wings reach to the end of the tail; the exterior sides of the five outermost feathers of the tail dusky; their inner sides blotched with black and white; the two middle black and cinereous; the legs and toes feathered, the last remarkably short. Length, 1 foot 10 inches. Inhabits Hudson’s Bay and Newfoundland. Preys much on ducks. Sits on a rock and watches their rising, when it instantly strikes at them.” (Pennant, as above.)

Regarded by authors as a synonyme for the Black Hawk (*Archibuteo sancti johannis*), but the description suits better the Ferruginous Buzzard (*A. ferrugineus*). Neither of these has, however, the toes feathered, nor otherwise entirely agrees with the description. It may be an unknown species.

7. *FALCO* *OBSCURUS*. Gm., Syst. Nat., I. p. 281. (1788.) The Dusky Falcon. Penn., Arct. Zool., I. p. 248.

"With a bluish bill; upper mandible armed with a sharp process; yellow cere; head, neck and coverts of the wings and tail dusky brown, slightly edged with ferruginous; hind part of the neck spotted with white; primaries dusky; inner webs marked with oval spots of a pale rust color; tail short, tipped with white, and barred with four broad dusky *strokes*, and the same number of narrow ones of white; the hind part of the head spotted with white; from the chin to the tail whitish, streaked downwards with distinct lines of black; legs deep yellow. Inferior in size to the last (*F. dubius* or *fusca*). Inhabits the province of New York." (Pennant, as above.)

Cited by authors as a synonyme for the sharp-shinned Hawk (*Accipiter fuscus*), which seems to be erroneous, though correct enough if reference only be made to Gmelin's compilation of Pennant's description. The latter, as quoted above, and which is the original, appears to apply to *Falco columbarius* (Linn.), but not with sufficient accuracy to be without doubt, and we know of no bird at present inhabiting "the province of New York" that it entirely suits.

8. *AQUILA* *MACULOSA*. Vieill., Ois d'Am. Sept., I. p. 28, pl. 3 bis. (1807.)

Upper part of the head, nape, neck, and mantle, black; eyebrow white, bordered by a black line from the eye; space between the bill and eye and cere blue, the former with scattered hairs; iris yellow; throat and breast white, every feather with a longitudinal central stripe of black; abdomen black, many feathers having circular spots of white; tibia and under tail-coverts ferruginous, with central spots of brownish; rump and upper tail-coverts white, with transverse stripes of black; quills and tail leaden gray above, light bluish-gray beneath; feet orange; claws blackish. Total length, about 25 inches; wing, 16; tail, 10 inches.

An excellent figure of this bird is given by Vieillot, as above, but which represents no species with which we are acquainted. In general appearance it resembles *Phalcobænus carunculatus*, Des Murs (Rev. et Mag. de Zool., April, 1853, p. 154), a South American species, of which specimens are in the collection of the Philadelphia Academy. Though given by Vieillot as a bird of North America (as above, and in Nouv. Dict., XXXII. p. 56), we suspect that he was mistaken.

9. *SPARVIUS* *ARDOSIACEUS*. Vieill., Ency. Meth., III. p. 1274. (1823).

Body above, bluish slate color; beneath, ferruginous, with transverse white bands; chin white; bill bluish-black; feet orange; cere and edges of the mouth dull green; quills and tail brownish-black; eyebrows dull white; tail slightly forked. North America.

Possibly *Accipiter fuscus*, but we regard it as quite remarkable that Vieillot, at so late a date, should have again described that species, being undoubtedly well acquainted with North American birds. We recollect no bird which exactly suits this description.

10. *FALCO BACHMANII*. Aud., Orn. Biog., V. p. 334. (1839, the date on the title-page of this volume is erroneously printed 1849.)

"I have several times seen in South Carolina a Hawk flying, equal in size to *Falco lineatus*, and remarkable for the great breadth of its wings. It was of a uniform brown color, excepting the tail, which was barred with white. The same bird has also been repeatedly observed by my friend, Dr. BACHMAN, who feels assured of its being distinct from any other Hawk hitherto found in North America." (Audubon, as above.)

This is the entire and only description published and the species alluded to has never been identified, to our knowledge.

11. *MILVUS LEUCOMELAS*. Rafinesque, Annals of Nature, part I. p. 4. (1820.)

"White, unspotted; top of head and part of the back, wings, tail, and bill, black; feet yellow. It is found in West Kentucky and Illinois; it feeds on fishes, and is therefore called Fishing Hawk. Size small, tail quite forked." (Raf., as above.)

This is a puzzler. If any such bird exists, it has escaped late researches, though we very much suspect that Rafinesque ventured a description on reports, rather oddly confounding the Forked-tailed Hawk (*Nauclerus*) and the Osprey, or Fish Hawk (*Pandion*).

12. *AQUILA DICRONYX*. Rafinesque, Atlantic Journal, p. 63. (1832.)

The specimen described under this name was the same that is alluded to by Mr. Audubon in his article on the White-headed Eagle, in Orn. Biog., II. p. 163, as being kept in captivity in the suburbs of Philadelphia, and this description and its author he also alludes to. We mention this bird for the purpose of facilitating the student who may not have access to the works of Rafinesque, and for the purpose of pointing out a curious error into which Mr. Audubon and Dr. Harlan, as quoted by him, seem to have fallen, in regarding it as the White-headed or Bald Eagle (*Haliaetus leucocephalus*). It is expressly stated by Rafinesque to have been brought from "near Buenos Ayres," and was evidently, from his description, the *Circæus coronatus* of South America. This name is therefore by no means to be cited as a synonyme for *Haliaetus leucocephalus*.

13. *FALCO DOLIATUS*. Shaw, Gen. Zool., Aves., VII. p. 77. (1809.)

"Length ten inches; bill violet; cere, irides, and legs, yellow; tail marked with whitish bars more apparent beneath than above; under tail-coverts and flanks brown, with two or three round white spots on each side of the shaft; thighs ferruginous, with black shafts. Inhabits Carolina, observed by Bosc." (Shaw, as above.)

Probably the young of either *Hypotriorchis columbarius* or *Accipiter fuscus*, but quite impossible to identify from such a meagre description.

14. *FALCO GLAUCUS*. Bartram, Travels, p. 290. (1791.) Barton, Fragments of the Nat. Hist. of Penna., p. 11. (1799.)

"The sharp-winged hawk, of a pale sky-blue color, the top of the wings black." (Bartram, as above.)

This insufficient description has been supposed to be intended for the adult of the Marsh Hawk (*Circus hudsonius*), but Barton (as above) applies it to the *Nauclerus furcatus*. It is probably one or the other.

15. *FALCO SUBCERULEUS*. Bartram, Travels, p. 290. (1791.)

"The sharp-winged hawk, of a dark or dusky blue color." (Bartram, as above.)

Impossible to identify, from its brevity. It may be either the Mississippi Kite (*Ictinia mississippiensis*), the Fork-tailed Hawk (*Nauclerus furcatus*), or the adult Marsh Hawk (*Circus hudsonius*).

16. The following names have been given without descriptions, by the authors cited:—

FALCO REGALIS. The great Gray Eagle. Bartram, Trav., p. 290. Barton, Frag. Nat. Hist. Penna., p. 11.

FALCO GALLINARIUS. The Hen Hawk. Bartr. Trav., p. 290.

FALCO PULLARIUS. The Chicken Hawk. Bartr. Trav., p. 290.

FALCO RANIVORUS. The Marsh Hawk. Bartr. Trav., p. 290.

FALCO PISCATORIUS. The Fishing Eagle. Bartram, Trav., p. 290. Barton, Frag. Nat. Hist. Penna., p. 2, 17.

FALCO CÆSIUS. The Blue Hawk. Ord., Zool. N. A., in Guthrie's Geog., I. p. 315.

The above embrace all the names and descriptions of birds of this family that have come under our notice, except those of such as are now well ascertained to inhabit other countries exclusively, and for which nearly allied species of North America have been mistaken. Of the latter we may more particularly mention the European *Falco rusticolus* (Linn.), which is given by Fabricius as a bird of Greenland, but stated by Holboll to have been the young of *F. anatum*, and *Buteo vulgaris* and *Hypotriorchis æsalon*, both of which are also European species, and have never been found in America to our knowledge, though there are species which are nearly related to them.

The student may advantageously bear in mind that of those above, which were originally described by Pennant, in English, abstracts or compilations only, in Latin, are given by Gmelin in his edition of the Systema Natura of Linnæus. These abstracts are mostly very short, and not always to be relied on as conveying strictly the sense of the originals. Nor are they at all improved by Turton in his edition of Linnæus, in which, so far as relates to these species, he merely retranslates into English the Latin text of Gmelin without reference to Pennant. In the study of the obscure species alluded to, the original descriptions only can be consulted without risk of error.



The American Falcon

FALCO POLYAGRUS.—CASSIN.

THE AMERICAN LANIER FALCON.

PLATE XVI.—MALE AND FEMALE.

THE researches of late naturalists have tended to demonstrate that the animals of Western North America have a more intimate relationship with those of Asia and the old world generally than those of the Eastern portion of this continent. Nor is this affinity restricted, apparently, to any one class, or to such as might have migrated, but is found to exist in a greater or less degree in classes of animals, as that of reptiles, possessing powers of locomotion too limited to admit of such supposition. When, too, we have had our attention directed to the family of Sparrows and Finches, to the beautiful Jays and Magpies, or the various species of Grouse, Partridges, and many other families, we have been almost persuaded to entertain the opinion that the birds of Western America are of a higher grade of organization than those of the Atlantic States. Whether such is the case in other classes of animals, we are not prepared to say, but, if true, it is singularly accordant with the fact that, of the aboriginal American races of men, the West has produced the superior. And it is remarkable, too, that there are Western tribes which very intimately resemble the Mongolian variety of the human race, if they do not really belong to it; thus connecting themselves with the Chinese and Japanese, and other nations of Northern Asia.

The remarkable Falcon which we now have the pleasure of introducing to the reader, is one of the species that show close affinity to an Asiatic congener. It is so much like a common Falcon of India, a bird much used for the purposes of falconry, and known by the name of the *Jugger*, in the valley of the Indus and other parts of India (*Falco jugger*. Gray, Ill. of Indian Zoology, II. pl. 26, and Jerdon, Ill. Indian Orn., pl. 44), that it can scarcely be distinguished from it by any character, except size. It is in fact one of the most remarkable instances of close proximity to an Asiatic relative to be found in American birds. It is larger than the Indian *Jugger*, and more powerful and robustly organized.

Though trained for the chase, the Asiatic bird alluded to is not held in as high estimation as several others; the greatest favorites being the Peregrine Falcon (*Falco peregrinus*), nearly related to the Duck Hawk of the Atlantic coast of America (*F. anatum*), and the Indian Goshawk (*Astur palumbarius*), which is also a relative of an American species. Falconry, though now little cultivated in Europe, is yet a much-pursued and favorite pastime in several countries of the East. In addition to the Hawks just mentioned, several others, a few of which are more or less nearly related to species of this

country, are employed. Some of the smaller Hawks of India are so easily trained that they are set free at the close of a hunting season, the Falconer not considering them of sufficient value to induce him to keep them until another.

The home of the bird now before us, appears to be the mountainous regions of Oregon and California, from which it descends in the winter season to the lower districts, in the valleys of the rivers, and on the shores of the Pacific. In the former country, near the sources of the Platte river, the first specimen that we ever saw, was obtained by the late Dr. John K. Townsend during his trip across the continent in the year 1834, and in whose collection, now belonging to the Philadelphia Academy, it yet remains. Since that period it has been observed in the Rocky Mountains and on the Columbia river, by the naturalists attached to the United States Exploring Expedition, in the Vincennes and Peacock. In the fine zoological collection made by this expedition, is preserved the only female specimen, in the dark plumage, described below, yet known to have been brought to the attention of naturalists. In California, Dr. Heermann particularly noticed this bird, and his collection contains several specimens which he obtained in the plains near Sacramento city.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS FALCO. LINNÆUS, SYST. NAT., I. p. 124. (1766.)

General form compact and strong; bill strong, short, with a distinct and sharp tooth in the upper mandible; wings long, pointed; tail moderate, or rather long; tarsi short, robust; toes long, claws large, curved, sharp; tarsi covered with hexagonal or circular scales. A genus of birds remarkable for their courage and very rapid flight, species of which are found in all countries.

FALCO POLYAGRUS. Cassin, Birds of California and Texas, I. p. 88. (1853.)

Form robust; wings rather long, second and third quills longest, and nearly equal; tail rather long; bill short, rather wide at base; tooth in the upper mandible prominent.

DIMENSIONS. FEMALE. Total length of skin, about 20 inches; wing, 14; tail, 8 inches.

COLÔRS. FEMALE NEARLY ADULT. Narrow frontal band, line over the eye, and entire under parts white; narrow stripe from the corner of the mouth running downwards, dark brown; some feathers on the breast, and abdomen with longitudinal stripes and spots of brown, which color forms a large and conspicuous spot on the flank. Entire upper parts brown, paler on the rump, many feathers with rufous edgings; tail above pale grayish-brown, with transverse bars of white, and narrowly tipped with white; quills dark grayish-brown, with numerous bars of white on their inner-webs; under

wing-coverts dark brown; edge of the wing at the shoulder and below, white, spotted with brown. The brown of the back extending somewhat on to the breast at the wing. Bill, bluish horn color, under mandible yellow at its base. Large space around the eye, bare, with a narrow edging of brown on the first plumage by which it is encircled.

YOUNGER FEMALE. Entire plumage above and below, brownish-black; throat white; many feathers on the under parts with edgings and circular spots of white; under wing-coverts also with circular spots of white, and the under tail-coverts with wide transverse stripes of the same.

YOUNG MALE? Frontal band nearly obsolete; entire upper parts uniform pale brown, with narrow rufous stripes on the head; under parts white, with a tinge of fulvous, and nearly every feather with a narrow longitudinal stripe of blackish-brown; large spaces on the flanks, brown; tarsi and feet, lead-colored.

HAB. Oregon and California. Spec. in Nat. Mus., Washington; and Mus. Acad., Philada.

OBS. This is the only American Falcon yet discovered, which belongs to the group forming the sub-genus *Gennaia*, Kaup., which contains *Falco lanarius*, Linn., (Gould, B. of Eur., I. pl 20); *Falco biarmicus*, Temm., (Pl. col., 324); *Falco jugger*, Gray, and several other species. It especially resembles the last, but is larger, and we are at present of opinion that the young of the two species differ in the colors of their plumage.

PIPILO FUSCA.—SWAINSON.

THE CANON FINCH.

PLATE XVII.—ADULT MALE.

THIS plain-plumaged and sober-looking bird is another of the feathered inhabitants of the mountainous wilds of California and New Mexico. Numerous specimens have been brought in the various collections which have been made in those countries, and it may be regarded as one of the most abundant of the peculiar species of Western America.

It was first described, however, by Mr. Swainson, from Mexican specimens.

Our friend, T. Charlton Henry, M. D., of the United States Army, a zealous and talented young naturalist, who has been for some years in New Mexico, has noticed this bird at all seasons in that country. For much valuable and satisfactory information relating to the birds to be included in the present work, we are indebted to this gentleman, amongst whose notes in our possession we find the following, relating to the species now before the reader:—

“This bird is common in New Mexico during both summer and winter, and so far as I have observed, lives almost entirely in the mountains. It is very retiring in its habits, and seems to prefer the cañons; indeed, I have seldom observed it far from some shady gorge, where, like its relative of the Eastern States, the Towhe-Bunting (*Pipilo erythrophthalma*), it passes the greater part of its time on the ground, and is generally accompanied by its congener, the Arctic Ground Finch (*Pipilo artica*). When disturbed, it seeks the thickest cover, though it is by no means shy nor difficult to approach. Its nest is usually constructed in the thick branches of a cedar or dwarf oak, and I am not aware of its producing more than a single brood in a season.

“The only note that I have ever heard this bird utter, is a simple chirp, somewhat resembling that of the Fox Sparrow (*E. iliaca*), but more subdued. It is usually to be met with in pairs, at all seasons.”

Col. McCall observed this bird to be abundant also in California, and with his usual kindness, has furnished a notice of it for our present article.

“The *habitat* of this species, I am inclined to believe, extends throughout California, as I met with it from the upper waters of the Sacramento river to the mouth of the Gila, the former having its origin in the north, the latter debouching at the extreme southern boundary of the State; yet, it is by far the most abundant from Santa Barbara southwardly.

“The habits and manners of this species differ somewhat from those of its relatives, the Towhe and the Arctic Finch (*P. erythrophthalma*, and *P.*



The Carolina Tanager

arctica). Its flight is more even and regular, as it is without that violent jerking of the tail from side to side which gives such singularity and appearance of awkwardness to the movements of the Towhee. It is also less shy and suspicious than the Arctic Finch, which I occasionally met with in the same regions. The latter I had previously observed with attention in New Mexico, where I procured specimens; and all my observations lead me to pronounce the present species less decidedly a *Ground Finch* than either of the others, although all are doubtless closely allied.

"The favorite abode of this species appeared to be the vicinity of water-courses, where it was generally seen singly or in pairs, though I have at times surprised eight or ten together, under the shade of a large bush, at noon in a summer-day; and at such times I had no difficulty in procuring, with my gun, three or four specimens before the party was dispersed. In fact, it appeared at all times a familiar bird, boldly coming into the roads to feed, and permitting the close approach of a person either mounted or on foot. If compelled to retreat, it darted suddenly into the thicket, but returned again as soon as the cause of alarm had disappeared. Near Santa Barbara, in the month of July, I found thirty or forty of these birds dispersed over an old field of some five acres in extent, lying contiguous to the sea-beach, and through which a small stream of fresh water trickled as it crept silently away to the sea. Here they were feeding on the ground, sheltered by a rank growth of weeds; and when I flushed one of them as I walked along, he almost invariably flew into a neighboring tree, instead of seeking shelter again in the weeds at a little distance.

"At this time, the birds of the year were fully fledged, and scarcely differed in the color of their plumage from the adults. The rufous tints of the head, the wing-coverts, and the lower parts generally, being only rather more bright and distinct in the old birds than in the others."

The collections made in California by both Mr. Bell and Dr. Heermann, contained many fine specimens of this species. According to the latter (in *Journal of the Philadelphia Academy*, quarto, II. p. 267), it builds its nest always in a bush or tree, in which respect it differs from the Arctic Ground Finch (*Pipilo arctica*), another Western species, which builds on the ground, and from others of the same genus, in this respect confirming the observation of Dr. Henry, as given in a preceding page. Dr. Heermann's observations possess an especial interest, from his having so carefully stated the peculiarities of the construction of the nests and other facts relating to the nidification of many species. He says, respecting the present bird: "I found one nest built in a grape-vine, overhanging the Sacramento river, and all that I have seen were placed in the immediate vicinity of water. The nest is composed of coarse twigs and grasses, and lined with fine roots. The eggs, four in number, are of a pale blue color, dashed with black spots, and interspersed with a few faint neutral tint blotches, which are more abundant at the larger end."

The name Cañon Finch we have taken the liberty of adopting from Dr. Henry's manuscript notes in our possession: it was very appropriately given by him with reference to the localities which he has observed to be the favorite haunts of this bird in the mountains of the Far West.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *PIPILO*. Vieillot, *Analyse*, p. 32. (1816.)

Form lengthened, but rather robust; bill short, conical, strong; wings short, rounded, the fourth primary usually longest, but little longer than the third and fifth; tail long, wide, much rounded at the end; tarsi and toes strong, compressed. An American genus, comprising several species of both divisions of this continent.

PIPILO FUSCA. Swainson. *Philos. Mag.*, 1827, p. 434.

Form large for this genus; bill rather longer than in other species; tail long, and composed of broad feathers.

DIMENSIONS. Total length (of skin) from tip of bill to end of tail, about 9 inches; wing, $4\frac{1}{8}$; tail, $4\frac{5}{8}$ inches.

COLORS. Entire upper parts olive-brown, with a rufous tinge on the head, and ashy on the scapulars and wing-coverts. Nares, circle around the eye and throat, pale rufous; the latter spotted with black. Breast, sides, and flanks, cinereous; middle of the abdomen white, with a tinge of fulvous; under tail-coverts bright fulvous. Quills and tail-feathers brown, the former edged exteriorly with ashy, the latter with olive. Bill and feet light. Sexes very nearly alike.

HAB. California and New Mexico. Spec. in Mus. Acad., Philada.

OBS. This bird resembles no other species of its genus, except *Pipilo Aberti*, Baird, (Stansbury's Report of a Survey of the Valley of the Great Salt Lake of Utah, Zoology, p. 325, 1852). From this it differs in the color of the throat, that of the latter being uniform with the other inferior parts of the body, and in other characters.

The figure in our plate represents the adult male about two-thirds of the natural size.



The Crowned Flycatcher.

PYROCEPHALUS RUBINEUS.—BODDAERT.

THE SCARLET-CROWNED FLYCATCHER.

PLATE XVIII.—ADULT AND YOUNG MALES.

THIS bright-plumaged little bird is a summer visitor to Texas and New Mexico, in which countries it rears its young, and appears to be an inhabitant also not only of Mexico, but of nearly the whole of Central and South America. It has been long known as a bird of the last-named division of this continent, though but recently ascertained to be a resident within the limits of the United States, having been first observed in Texas by Captain J. P. McCown, of the United States Army, in 1850, and announced as an addition to the ornithology of North America, by Mr. Lawrence, in the *Annals of the New York Lyceum of Natural History*, V. p. 115. In some interesting notes on the birds of Texas, by Capt. McCown, published in the same journal, VI. p. 12, we find the following in reference to the present species :

“ This beautiful little Flycatcher is seldom seen. I did not notice over a dozen of them while in Western Texas. I always found them near the ponds along the Rio Grande, and generally on a tree or stake near the water. The only nest I ever found was built upon a *retama* (a variety of acacia), over the water, and I was not able to procure it. The female is quite a plain bird.”

Our friend, Lieut. D. N. Couch, one of the several officers of the Army who have greatly contributed to the knowledge of the Natural History of little-explored portions of this country, and the results of whose observations have most generously been placed at our disposal, met with this bird in small numbers in Northern Mexico. From many valuable papers, which will add much to the interest of the present work, and for which we are indebted to this gentleman, we make the following extract :

“ This bird was first seen at Charco Escondido, in Tamaulipas, on the tenth of March. The male had evidently preceded the female in his arrival, as the latter was not observed until several weeks afterwards. Early in the morning, and again about sunset, he came to the artificial lake that is constructed here for the supplying of water to the inhabitants, and appeared to be of a very quiet and inoffensive disposition, usually sitting on the upper branches of the trees, occasionally uttering a low chirp. Subsequently, it was met with in Nueva Leon, though I had little opportunity of observing its habits. It appeared, however, to be in some respects similar in its manners to the smaller species of the Northern Flycatchers.”

Dr. Henry has also met with the present bird in the vicinity of Fort Webster, New Mexico. He represents it, however, as of exceedingly rare

occurrence, so far as he has observed, and fully confirms the statements given above, respecting its partiality for the neighborhood of water. His first specimen, a male in full plumage, was obtained on the Rio Miembres, near Fort Webster, in the month of March, 1853.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS PYROCEPHALUS. Gould, Zool. Voy. Beagle, Birds, p. 44. (1841.)

General form compact and rather heavy; bill depressed, wide at base, rather long, acute, with an indentation near the tip of the upper mandible, and with several pairs of bristles at its base; wing long, the second and third quills longest, and nearly equal; tail ample, wide; tarsi rather long, slender; toes moderate or short. The species generally have the feathers of the head above lengthened and crest-like, and with other parts of the plumage of a fine scarlet color. An American genus of Flycatchers inhabiting the southern portion of the northern and nearly the whole of the southern division of this continent.

PYROCEPHALUS RUBINEUS. (Boddaert.)

MUSCICAPA RUBINEUS. Bodd., Tab. dez Pl. Enl. Buff., p. 42. (1783.)

MUSCICAPA CORONATA. Gm., Syst. Nat., II. p. 932. (1788.)

FORM. Head above, from the base of the bill to the occiput, with long crest-like feathers. General form rather broad and robust; wings and tail long; legs slender.

DIMENSIONS. MALE. Total length (of skin), about $5\frac{1}{2}$ inches; wing, $3\frac{1}{4}$; tail, $2\frac{1}{2}$ inches.

COLORS. ADULT MALE. Long feathers of the head above, and entire under parts, fine scarlet; brightest on the top of the head, palest on the under tail-coverts. Upper parts of the body, line from behind the eye, wings and tail, sepia brown; bill and feet dark. Under wing-coverts frequently edged and tipped with pale red.

FEMALE. Entire upper parts plain sepia brown; under parts yellowish-white, with a few longitudinal lines of brown.

YOUNG MALE. Similar to the female, but with the flanks tinged with pale red.

HAB. Texas and New Mexico. Spec. in Mus. Acad., Philada.

OBS. On comparison of our specimens from Texas with others from various parts of South America, we cannot at present find differences sufficient to induce us to regard them in any other light than as one species. The present is the first bird of its genus which has been observed within the limits of the United States.

The sexes of this species are quite unlike each other, the female having none of the brilliant color of her companion.

The figures in our plate represent the adult and young males about two-thirds of the natural size.





The Blue Partridge

Geo. J. White del.

Callipepla squamata (Forsk.)

Printed & Col'd by J.T. Bowen Phila.

CALLIPEPLA SQUAMATA.—(VIGORS.)

THE BLUE PARTRIDGE. THE SCALY PARTRIDGE.

PLATE XIX.—MALE AND FEMALE.

THIS is another of the fine game birds that inhabit the countries on the southwestern frontier of the United States, and the adjoining regions of Mexico. Though not presenting such gay colors in its plumage as the two other Partridges which we have previously figured in the present work, it is by no means destitute of claim to respect in personal appearance, and in gracefulness and delicacy of form is not at all their inferior. We have always particularly admired its ample and curious crest, which is possessed by both male and female, and, though admitting of being flattened so as to lie close on the head, is usually to be seen erect, and gives it an air unusually spirited and striking. It is remarkable for great swiftness in running, and is more of an insect-eater than is usual in this family of birds. It is abundant in Texas and New Mexico.

Specimens of this bird had reached Europe as early as 1830, in which year it was first brought to the notice of naturalists by Mr. Vigors, one of the founders of the Zoological Society of London, and one of the most profound naturalists of the only school of systematic Zoology, the Circularian and Quinarian, which Anglo-Saxon mind has yet produced, a consideration one would think not slightly to be regarded. His description is in the Zoological Journal, V. p. 275. It has, however, always, until within a few years, been of great rarity in collections, and nothing was known of its history or habits until the publication of the valuable contributions to Natural History which have been made by officers of the Army of the United States.

The Blue Partridge was first noticed within the territory of the United States, by Lieut. J. W. Abert, a son of the distinguished officer who presides over the Topographical Department of the Army. In Lieut. Abert's very able and valuable "Report of an examination of New Mexico in the years 1846-7," made as an officer of Topographical Engineers, and which, besides its great military and geographical usefulness, contains much information relating to the natural history of that country, we find several notices of this bird, one of which, occurring under date of twelfth of November, 1846 (p. 497), we take the liberty of transferring to our pages:—

"After passing through the little town of Las Canas, we encountered another hill of sand, very difficult of ascent, and after we reached the top, we commenced the descent through a crooked ravine that was strewn with fragments of rocks. On the way, we saw several flocks of crested quails, which

were running along with great rapidity among the clumps of the Kreosote plant (*Larrea mexicana*). We procured one of them; at the report of the gun, only three or four rose up; they seemed to depend more on their fleetness of foot than swiftness of wing. This bird proved to be the *Ortyx squamata*. The size, contour, and general character, greatly resemble the common quail (*O. virginiana*); the plumage is of soft, silvery gray, the iris hazel, and the crest fringed with white. On opening the stomach, I found it filled with grass seeds and insects of the order Hemiptera." This is the earliest record of this bird having been observed within the limits of the United States; subsequently, it has been noticed by others.

Capt. S. G. French, of the United States Army, to whom we are indebted for fine specimens of this and other birds of Western America, has also favored us with the following note:—

"It was in 1846 that I first met with this bird near Camargo, on the Rio Grande. At Monterey, none were to be found; but on the plains at Agua Nueva, a few miles south of Saltillo, I observed them in considerable numbers.

"Since then, I have met with them occasionally on the Upper Rio Grande, in the vicinity of El Paso, and some seventy miles down the river from that place. They inhabit the same section of country with Gambel's Partridge, though I have never seen them associated together in the same covey. Their favorite resorts are the sandy chaparral and mesquite bushes, through which they run with great swiftness, resorting to the wing only when suddenly alarmed by finding themselves too nearly approached.

"They appear to be very shy, and but seldom are found near habitations, though I once saw a large covey run through my camp in the suburbs of El Paso.

"The bird that I sent you was killed on the Rio Grande, below El Paso, in July last (1852)."

Col. McCall, in his "Remarks on the habits, &c., of birds met with in Western Texas," in Proceedings of the Philadelphia Academy, V. p. 222, thus alludes to the Blue Partridge:—

"This species I have met with, at different times, throughout a more extended region than either of the former (the Massena Partridge and Gambel's Partridge), viz.: from Camargo on the lower Rio Grande, to Santa Fé. On the present occasion, they were more numerous between the latter point and Don Ana than elsewhere. They seem to prefer the vicinity of the greater water-courses to interior tracts. They are much more wild than either of the preceding, and being extremely watchful and swift of foot, they elude pursuit with surprising skill, scarcely resorting to flight even in comparatively open, sandy ground. They do not approach the settlements as much as the last.

"For the table, all these species, however, possess in a high degree the requisites of plump muscle and delicate flavour. Massena is, perhaps, the best."

The following more extended and beautiful sketch, referring to this Partridge, has been very kindly furnished by the same gentleman (Col. McCall), for our present article: —

“The *habitat* of this species, as I have remarked elsewhere, embraces an extensive region, the limits of which, though not yet positively defined with any degree of accuracy, may, at least with reference to our own territory, be asserted to lie principally within the valley of the Rio Grande or Rio del Norte of Mexico. This valley, although comparatively narrow, contains a country of great extent from north to south; and embraces, in its stretch between the Rocky Mountains and the Gulf of Mexico, every variety of climate, from the extreme of cold to that of tropical heat. This entire region, not even excepting the narrow mountain-valleys, covered in winter with deep snows, is inhabited by the species under consideration. I have met with it on the Rio Grande and its affluents, from the 25th to the 38th degree of north latitude — that is to say, from below Monterey, in Mexico, along the borders of the San Juan river to its junction with the Rio Grande; and at different points on the latter as high up as the Taos and other northern branches, which gush from the mountain sides. I have also found it, though less frequently, near the head of the Riado creek, which likewise rises in the Rocky Mountains and flows eastwardly to the Canadian; further north than this my examinations did not extend.

“Now, as the Partridge, wherever found, is always *resident*, there is in the extensive distribution above noted, good proof of a hardness of constitution possessed by no other species of American Partridge, except the common or Virginia Partridge; for no other species has been found in regions as cold and inhospitable as those I have named. Again, arguing from analogy, if the plainer plumage is always found in birds inhabiting more northern latitudes, my opinion is strengthened when I look upon the plain and sober hues of the *Blue* Partridge as contrasted with the bright and more decided colors of the *Massena*, *California*, and *Gambel's* Partridges, all of which prefer the milder regions, and shun those of snow.

“The habits, moreover, of this species are more like those of the common Partridge than either of the others. I have shot these birds over a pointer dog, and at times found them to lie sufficiently close to afford good sport; this, however, it must be admitted, was not often the case, and never, unless the cover was remarkably good; for, in general, they are vigilant and wild, making their escape by running on the first approach of danger. In swiftness of foot none of the family can compete with them. When running, they keep the body erect and hold the head high; and in this attitude they seem fairly to skim over the surface of the ground. On such occasions the white plume is erected and spread out like a fan, or rather like an old fashioned *chapeau de bras*, worn fore and aft: this gives them a trim, jaunty air, that is peculiarly pleasing and attractive. I remember once being particularly struck

with the beautiful appearance thus presented by a large covey that I came upon suddenly in open sandy ground. It was in the month of February, just at sunrise; I was half asleep on my horse, and thoroughly benumbed with cold (having been in the saddle since two hours before daybreak, in order to reach Eagle Spring by breakfast time), when a sudden start of my horse roused me into wakefulness. On looking up, I beheld about twenty of these birds in the trail a few yards in advance. Contrary to their usual manner, they were strutting along, or rather slowly walking away; and with their white *chapeaux* spread out to the full extent, they glanced over their shoulders and clucked to each other as if uncertain whether danger threatened or not. I drew up my horse and looked on with delight, until the little fellows finally took to their heels and swiftly glided away to the nearest cover. This little incident having restored me to full consciousness, I cast my eyes around, and never shall I forget the sublime prospect that then burst upon my enchanted gaze.

"A more glorious, a more heavenly dawn of day than this, it is impossible to conceive! The heavy dew of the preceding night has been congealed, and the whole country is white with frost. The rising sun casts his broad beams over the vast plain, and in an instant its surface is brilliant with sparkling crystals.

"The abrupt and isolated peaks, whose soft parts the frosts and storms of past ages have loosened and swept away, seem in the distance to rear still higher their lofty summits, now crowned with glittering diadems. On all sides, to the farthest extent of my powers of vision, the varied prospect is open to my view — hereaway, strongly defined, I behold the bold outline of the Apache mountains; yonder, I regard, with admiration growing as I gaze, the countless undulations of the prairie, each as it succeeds the other diminishing in the distance until the last faint wave is blended with the blue horizon. Still admiring as I turn, I find my horse at last fairly faced about; and now another view, the grandest, the strangest of all, is presented to my almost bewildered senses. It is the *mirage*! Wonderful illusion, cruel mockery — how often hast thou deceived the famished wanderer of the plains with the semblance of water; leading him on farther and farther, and leaving him at last sinking and exhausted in the midst of the desert!

"Behold! I clearly see a broad lake of bright water, with noble trees growing on either hand; and nothing but the positive knowledge that this counterfeit lake lies directly across the road over which I have just passed, and the perfect certainty under which I rest, from actual examination, that neither wood nor water is to be found in that direction within thirty miles, can persuade me that what I now look upon is not real! But I will return from this digression — yet, if this page ever meets the eyes of my two companions on that expedition (Lieutenants B — and M —, of the 3d), they will remember the glorious sunrise, the mirage, and finally, the covey of Partridges to which I have here alluded.

"This species is found farther to the south on the Mexican side of the Rio Grande than on our own, owing probably to the rugged character of the country there, for I never met with it anywhere in low grounds. The first appearance it makes in Texas is a little above Rhinosa, on the first highlands on this side encountered in ascending the river from its mouth. Thence up to the Rocky Mountains, the birds of this species may be considered denizens of the United States, being about equally distributed on both sides of the great river."

In a paper in the "Registro Trimestre," I. p. 144 (Mexico, 1832), Don Pablo de la Llave, an able Mexican naturalist, gives a description of this bird, and names it *Tetrao cristata*. He had kept it, with other species, in captivity, and of his notice of it we give the following translation: "The second species is considerably smaller than the preceding," (*Tetrao marmorata*, Llave, which is *Ortyx macroura*, Jardine and Selby). "It has on its head a crest of feathers very erect and soft, bill black, the neck moderate, body elongated, much compressed, feet robust, gray or blackish; small, and have, more than in *Tetrao*, the appearance of the Larks or Buntings. It is almost entirely of a lead color, with the feathers of the breast speckled with black, and those of the sides with many longitudinal bands of white. Its voice is very much varied, and that of the male is loud, sounding like a castanet, at the same time raising and depressing its head.

"I have not observed in this bird any courage; — it is very timid; all its movements are rapid, and notwithstanding that I have fed my specimens for a long time, every day they become more wild and intractable.

"It inhabits the *Mezquite* regions in Northern Mexico."

The contents of the stomachs of Capt. French's specimens were hemipterous insects, some of which were very minute, with a few seeds and pods.

Our plate represents the male and female, which are nearly alike in plumage, about two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *CALLIPEPLA*. Wagler in *Isis*, 1832, p. 277.

CALLIPEPLA *SQUAMATA*. (Vigors.)

ORTYX *SQUAMATUS*. Vig. *Zool. Jour.*, V. p. 275. (1830.)

CALLIPEPLA *STRENUA*. Wagler, *Isis*, XXV. p. 278. (1832.)

TETRAO *CRISTATA*. Llave, *Registro Trimestre*, I. p. 144. (1832.)

FORM. Robust, body compressed; head with long, erectile, crest-like feathers; bill rather strong, curved; wings short, with the fourth quill slightly longest, tertiaries long; tail rather long, ample, rounded; legs and feet moderate; tongue pointed, very acute at the tip; nostrils large.

DIMENSIONS. Total length of skins, $8\frac{1}{2}$ to 9 inches; of specimens in spirits (from Capt. French), 10 inches; wing, $4\frac{1}{2}$; tail $3\frac{1}{4}$ inches.

COLORS. Head light yellowish cinereous, with a tinge of brown; feathers of the crest broadly tipped with white. All other parts of the plumage light bluish ash color, paler on the under parts and nearly white on the abdomen; nearly every feather of the under parts and of a wide ring around the back of the neck, with a central arrow-head, of brownish black, and with a narrow but very distinct edging of the same. Flanks with longitudinal central stripes, and in some specimens with circular spots of white. Middle of the abdomen frequently with a large spot of pale chesnut; under tail-coverts nearly white, with longitudinal stripes of dark ash and brown. Quills light ashy-brown; shorter tertiaries frequently edged with yellowish-white on their inner webs; bill, black; irides, hazel; tarsi, brownish lead-colored. The width of the white tips of the feathers of the crest varies in different specimens. Sexes very nearly alike; female slightly paler, and not so fully crested.

HAB. Texas and New Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington.

OBS. This species does not resemble any other at present known, and is therefore easily recognized. It is the type of Wagler's genus *Callipepla*, in which are also arranged the California Partridge and Gambel's Partridge.



The Brown headed Finch

Ammodramus ruticeps

Lith. Printed & Col. by J. T. Bower, Phil.

Ammodramus ruticeps Cassin.

AMMODROMUS RUFICEPS. — CASSIN.

THE WESTERN SWAMP SPARROW.

PLATE XX. — ADULT MALE.

THE only information that we can present to the reader respecting the bird now before him, is, that specimens were brought from California in the collections made by Mr. Bell and Dr. Heermann. It appears to have been overlooked by all other naturalists, — a circumstance probably not to be attributed to its rarity in its native country, so much as to the character of the localities in which it lives during the greater part of the year, in common with other species of the same family.

The little birds of the group to which this species belongs, of which there are several, are all of humble and unpretending appearance, and live in the vicinity of the shores of the ocean and the margins of streams of fresh water, and hence have been designated Swamp Sparrows. The *flats*, or other low and level tracts, overgrown with reedy or sedgy vegetation, in the vicinity of the sea-shore, are the favorite resorts of two or three species throughout a large portion of the entire extent of the Atlantic coast of the United States; while somewhat similar localities along rivers or smaller streams, or even swamps and marshes in the interior, afford appropriate habitations for others. In these they subsist mainly on seeds of grasses and such other plants as usually abound in those situations, and occasionally on insects. The Swamp Sparrow, first described by the celebrated ornithologist, Wilson (*Ammodromus palustris*), is the best known of these birds, and is abundant in all suitable localities, during the summer season, throughout the greater part of the older States of the Union. In winter, it migrates southward, and is found in large numbers along the Mississippi river in the south, and other streams in the southern States. The Swamp Sparrows have no song, other than a few rather remarkable and not unmusical notes.

Dr. Heermann remarks of this bird: "In the fall of 1851, I met with a single specimen of this bird, in company with a flock of Sparrows of various kinds. In the spring of 1852, I found it quite abundant on the Calaveras river, where I procured several specimens. Its flight appeared feeble, and when raised from the ground, from which it would not start until almost trodden upon, it would fly a short distance, and immediately drop again into the grass. Its notes are a ditty, resembling that of our Chipping Sparrow (*E. socialis*), and were heard towards the spring season."

In our plate this bird is represented of the size of life.

The plant is a western species of *Ipomea*, which was raised from the seed by our esteemed friend, Mr. Robert Kilvington, of Philadelphia, to whose kindness we are indebted for the privilege of figuring it and other plants for the plates of the present work.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS AMMODROMUS. Swainson, Zoological Journal, III. p. 348. (1827.)

Size small; bill lengthened, pointed; tip of upper mandible slightly curved downwards; wings very short; the first primary shorter than the succeeding four or five, which are nearly equal; tail moderate, or rather long, with its feathers narrow; tarsi and toes rather long, slender. An American genus, containing six or seven species.

AMMODROMUS RUFICEPS. Cassin, Proc. Acad., Philada., VI. p. 184. (Oct., 1852.)

FORM. Bill shorter than usual in this genus; wings short, rounded; tail long; tarsi lengthened, slender.

DIMENSIONS. Total length of skin, about $5\frac{3}{4}$ inches; wing, $2\frac{1}{2}$; tail, $2\frac{3}{4}$ inches.

COLORS. Head above chesnut-brown, which is also the prevailing color of the back and rump, the feathers of both the latter edged with pale cinereous, tinged with olive. Spot in front of the eye white, forming a partial superciliary line. A narrow stripe of black from each side of the lower mandible running downwards, above which is a stripe of white; intermediate space on throat nearly white; other under parts pale ashy, with a tinge of olive; quills brown; primaries edged externally with ashy; secondaries with pale chesnut-brown; tail reddish-brown, with crimped obscure transverse lines; bill dusky horn-color; feet pale.

HAB. California. Spec. in Mus. Acad., Philada.

OBS. Resembles in some measure *A. palustris*, but can be easily distinguished. It appears to be restricted to California, not having been observed in New Mexico or Texas. Ammodramus is the original orthography of the name of this genus given by Swainson as cited above, but that here given is universally adopted, and is much the most usual in generic names of similar derivation.



The Black-headed Cuckoo

ICTERUS MELANOCEPHALUS. — (WAGLER.)

THE BLACK-HEADED ORIOLE.

PLATE XXI. — ADULT MALE.

AGAIN we portray an inhabitant of the land of the Mesquite and Mimosa. This handsome, though plain Oriole, when compared with some of its brilliant relatives of the same countries, is found throughout nearly the whole of Mexico, and extends its range northwardly into Texas and New Mexico. Mr. Pease, who accompanied the Army of the United States under General Scott, in Mexico, in 1847, observed it at Jalapa, and in the neighborhood of the city of Mexico, in considerable numbers.

As a bird of Texas, this species was first brought to notice by Mr. Jacob P. Giraud, Jr., of New York, who received it in a collection of birds from that State, in 1834, and published a description of it in his "New Species of North American Birds," p. 1 (1841). Since that time it has been found within the limits of the United States by several naturalists, but especially by Mr. John H. Clark, who, while attached as zoologist to the commission for running the boundary line between the United States and Mexico, neglected no opportunity of making investigations which have contributed much to the natural history of the regions necessarily passed through, and whose collection contained specimens of this species. To Mr. Clark we are indebted for the following note respecting this species :

"Approaching the lower Rio Grande from New Mexico, the Black-headed Oriole was first seen near Ringgold Barracks, but not in abundance; and, although of rich plumage, its quiet manners and secluded habits prevented it from being very conspicuous. It was noticed most frequently while feeding on the fruit of the hackberry; but whenever exposed in picking off the berries, it always showed signs of uneasiness, and would immediately seek refuge in places affording greater concealment.

"Usually, pairs were to be seen keeping close together, and they seemed to prefer the thick foliage which occurs on the margins of the ponds or in the old bed of the river. They did not appear to communicate with each other by any note; indeed, I was struck with their silence, though my opportunities for observation were limited. Their habits seemed to be very different from those of any other Oriole with which I am acquainted."

This observation, by so accurate and careful an observer as Mr. Clark, deserves especial attention. It is quite probable that this bird is the type of a distinct group or sub-genus.

In the papers of Lieut. Couch, most kindly placed by him at our disposal, we find the following in relation to the bird now before us:—

“The Black-headed Oriole was seen for the first time on the third of March, 1853, at Santa Rosalio rancho, eight leagues west of Matamoras. It had paired, and both male and female were very shy and secluded, seeking insects on the *nopal* (a species of prickly pear), or among the low mimosa trees, never seeming to be at rest, but constantly on the look-out for their favorite food.

“At Charco Escondido, farther in the interior of Tamaulipas, this bird was well known to the *rancheros*, who were disposed to give it a bad reputation, stating that it often came to the rancho to steal the freshly-slaughtered beef, hung up to dry in the sun. Whether this was true or not, I had no opportunity of ascertaining; but my acquaintance with the Black-headed Oriole, at this place, I have a particular reason for remembering. Early one morning, an old man, who had daily called on me, with his wife and six nude pickaninnies, presented himself, and wished as usual to take me to a spot where great numbers of rare birds were to be found. Gladly assenting, we were out of sight of the rancho at sunrise of one of the magnificent mornings only known in tropical latitudes. It was the day after a severe *norther*, and the whole feathered kingdom was in motion. My guide soon called my attention to two *calandrias*, as these birds are called by the Mexicans, which were quietly but actively seeking their breakfast. The male having been brought down by my gun, the female flew to a neighboring tree, apparently not having observed his fall; soon, however, she became aware of her loss, and endeavored to recall him to her side with a simple *pout pou-it*, uttered in a strain of such exquisite sadness, that I could scarcely believe such notes to be produced by a bird, and so greatly did they excite my sympathy, that I felt almost resolved to desist from making further collections in natural history, which was one of the principal objects of my journey into the country.

“Another species that takes the place of this bird, west of Monterey, has a more powerful, varied, and artistic song, but I have never heard the lay of any songster of the feathered tribe expressed more sweetly than that of the present Oriole. At Monterey, it is a favorite cage-bird. The notes of the male are more powerful than those of the female.

“My stay in Mexico was not sufficiently protracted to enable me to study the habits of this interesting bird as fully as I could have wished. Generally, its flight is low and rapid, and it seemed to prefer the shade of trees. It was observed almost invariably in pairs, and the male and female showed for each other much tenderness and solicitude. If one strayed from the other, a soft *pou-it*, soon brought them again together.”

Nature has, for much the greater part, denied to birds of brilliant plumage any remarkable powers of melody, and there are many birds of great beauty, in which the voice is harsh and uninviting, if not absolutely disagreeable.

Occasional exceptions occur, particularly in the families of Grosbeaks and Finches, species of which are capable of producing short, though expressive and musical notes, sometimes uttered in connection with each other, and forming a partial song. Such is the case, too, with a few of the Orioles; but we should infer from the interesting statement of Lieut. Couch, that the bird now before us is, at least, one of the most gifted of its family, and we shall look forward to his further investigations in Mexico, which he is now about commencing, hoping for additional information in relation to this remarkable species.

All the most celebrated songsters of the feathered kingdom are birds of very plain plumage. The Nightingale, famed in all ages, and universally admitted to be the most superior in vocal ability of all the birds of the world, would attract no attention whatever from the general observer, so modest and unpretending is its appearance. The Mocking Bird of the United States, properly regarded as second only to the Nightingale, is scarcely less so, and our other Thrushes, and the little *Vireos*, very respectfully to be mentioned as vocalists, partake of the same character.

Mr. Pease noticed the Black-headed Oriole not only at Jalapa, but also on the *tierra caliente*, between that city and Vera Cruz. At the season when observed by him, it fed principally on fruits, as noticed by Mr. Clark, which fact does not conflict with Lieut. Couch's statement, that it is an insect-eater; as all the birds of the family to which this species belongs, subsist on both fruits and insects, or are what are termed omnivorous. At Jalapa, it was called by the Mexicans, *Calandria iquimite*, the latter word being the name of a tree, of the fruit of which it is said to be particularly fond.

Our plate represents the adult male, which is but little different from the female. The figure is two-thirds of the natural size.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *ICTERUS*. Brisson, Orn., II. p. 85. (1760.)

ICTERUS MELANOCEPHALUS. (Wagler.)

PSARACOLIUS MELANOCEPHALUS. Wagler, Isis, 1829, p. 756.

ICTERUS AUDUBONII. Giraud. New species N. A. Birds, p. 1. (1841.)

FORM. Rather robust; bill strong, high at base; wings rather short; third and fourth quills longest; tail graduated; central feathers longest; legs and feet large and strong.

DIMENSIONS. Total length of skin, from tip of bill to end of tail, $8\frac{3}{4}$ inches; wing, 4; tail, $4\frac{1}{4}$ inches.

COLORS. Head black, which color has a semicircular termination on the breast. Entire under parts and neck behind, bright yellow; back and rump yellowish-green; wings black; quills edged externally with ashy white; tail black; bill bluish-black, lighter at the base of the lower mandible: tarsi and

feet lead-colored; irides brown. Sexes nearly alike; female with the yellow parts of the plumage less vivid, and the tail in some specimens edged and tinged with greenish.

HAB. Texas, Mexico. Spec. in Mus. Acad., Philada.; and Nat. Mus., Washington city.

OBS. This bird resembles no other in any considerable degree; and is, therefore, to be easily distinguished. It seems to belong to some one of the subdivisions of the old genus *Icterus*, or of *Xanthornus*, which are so variously and confusedly given by professed systematists, that we have no faith in any of them; which declaration, by the way, we have no objection to embrace the present opportunity of extending to late *opinionative* classifications, in a manner rather general and comprehensive. It is about full time for a true zoologist to appear, who shall be capable of systematizing — of reducing to order and symmetry the vast fund of facts and detached knowledge in natural history, which the present age has accumulated. In our happier day-dreams, we have deemed it inevitable that such a one must shortly appear. The great Anglo-Saxon zoologist is yet to come.



The purple throated Humming Bird

Trochilus Alexandri Bourcier

from a drawing by H. E. Bourcier

Lith. Printed & Col^d by J. T. Bowen Phila

TROCHILUS ALEXANDRI.—BOURCIER AND MULSANT.

THE PURPLE-THROATED HUMMING BIRD.

PLATE XXII.—ADULT MALES.

THE Humming Birds are peculiar to America. Until within a comparatively recent period, about one hundred species were known to naturalists, — that being the then considered large number enumerated in works published as lately as within about twenty years. Discoveries of previously unknown species in this family of birds have been numerous beyond precedent or comparison with any other, notwithstanding the zeal and ability which ornithology has commanded within the period mentioned. At present, there are nearly three hundred ascertained species of Humming Birds. The large and recent additions have resulted, in a great measure, from the exploration of regions previously little visited or inaccessible, principally in the northern part of South America, but also in Central America and Mexico.

That portion of the continent of America between the Amazon as a southern boundary, and the Rio Grande and Gila as a northern, embracing New Grenada and Guiana, the whole of Central America and Mexico, to which may be added the West India Islands, appears to be the most productive of Humming Birds. Within that range, but especially in the Republic of New Grenada, these splendid little birds are much the most abundant, and it embraces nearly all of the most remarkable in form and most beautiful in plumage. Southward into Brazil and Peru, and other countries of South America, a considerable variety of species are also found; but, in the north, that is to say, north of the line between Mexico and the United States, we have few species of Humming Birds, and even those give us but an imperfect idea of the gorgeous tints of their relatives of the tropical regions of this continent.

Of the natural productions of America, these birds have attracted the most universal admiration. Nor has it been, by any means, without foundation. Nature appears to have exhausted herself in the lavish profusion of colors of every tint and shade with which she has adorned these gems of the animal world. They are the most splendidly colored and at the same time the most diminutive of birds. Almost every color known in art is to be met with in the plumage of some one or other of the Humming Birds, and usually with a lustre more resembling that of the most highly finished workmanship in metal, or of the most exquisite precious stones, than the transient or easily destroyed appendages of a delicate animal organization.

There are, however, some species which are quite plain in their appearance, and present little or no trace of metallic or other brilliant colors. Of these, one large species is perfectly black; others are reddish-brown, or fulvous and plain dark green.

In size, the Humming Birds vary much. The Giant Humming Bird of Brazil, which is the largest, though one of the plainest, is about the size of the Chimney Bird of the United States, and several fine species of the later discoveries in this group are but little smaller. Several species are quite as large as the House Wren. On the other hand, there are Humming Birds little larger than the Humble Bee of our meadows; and there are many species of Beetles and other coleopterous insects, that are much larger. The common ruby-throated Humming Bird of the United States, is a medium-sized species, and of respectable dimensions when compared with some of his pigmy brethren of the far South.

In form, too, they vary exceedingly. Some are very slender, and apparently feebly constituted; others are comparatively quite robust. There are species which have bills excessively long, the *Sword-bearer* (*Trochilus ensiferus*), which is about the size of the House Wren, has a bill longer than its body. So entirely disproportionate does the bill of this species appear to be, that few persons, on seeing specimens for the first time, can avoid a suspicion that it has been artificially lengthened; and we have more than once heard it suggested on such an occasion that this remarkable appendage could readily have been drawn out by processes used by comb-makers. This exceedingly long bill is, however, no inconvenience whatever to the gay little individual who is responsible for it, luckily for him; — in fact, it assists him admirably in procuring an entirely honest subsistence amongst the large trumpet-flowers, and others with long tubular corollas, abundant in tropical countries. No other known species has this organ of a length so disproportionate, though there are several in which it is unusually long for birds of such size. The bill is, however, scarcely of the same form and shape in any two species. In some, it is perfectly straight and very short; in others, as we have already observed, it is very long. Numerous others have the bill curved downwards, or scythe-shaped, and a few species have it turned upwards, presenting a very singular appearance.

Other curious appendages are to be met with in species of this family. One group has exceedingly long tails, three or four times the length of the body. Several Humming Birds have the outer feathers of the tail long, and though narrow for the greater part of their length, suddenly expanded at the end like a paddle or a spoon. These seem to form a group or sub-genus of their own, and are also remarkable for having the upper part of the leg (the *tibia*, and sometimes part of the *tarsus*) covered with a thick mass of white downy feathers, presenting one of the many instances of phenomena to which it appears almost impossible in the present state of our knowledge,

to assign a use in the economy of the species. The wings in all Humming Birds are large, when compared with those of many other birds, and are formed for long-continued and rapid flight.

The food of the Humming Birds is now well ascertained to be principally insects. We regard the conclusion, also, as unavoidable, that the moisture contained in flowers is their drink only, and not capable alone of supporting life. The tongue appears to be the principal organ used both in capturing insects and in procuring the fluid portion of their subsistence, and is constructed in a manner peculiarly adapted to these purposes. It is long, and composed of two parallel tubes (like a double-barrelled gun), furnished with the necessary apparatus of muscles for sucking, and thus enabling the bird to reach the drops of moisture or the fluid secretions contained very frequently in the corollas of flowers, more abundant in some species than others. The tongue is flattened, and sometimes barbed towards the end, or margined with fringe-like appendages, evidently designed to be of material service in feeding on minute flies or other small and soft insects. It admits, too, of being darted outwards, like that of the woodpeckers, and in the manner thus indicated it is very probable that their food is secured.

A large space on the throat is generally the most beautiful part of the plumage of the birds of this family. Frequently, however, the top of the head and the entire under parts of the body are clothed in colors of the most surpassing brilliancy. The upper parts are usually plainer.

In the countries where these birds are most abundant, and even in others of South America, some species of Humming Birds are spread over a vast extent of territory; — other species are well known to be peculiar to quite restricted localities. Many inhabit only the warmest districts; — others are found only in mountain-valleys, thousands of feet above the level of the sea. One of the most beautiful Humming Birds, the Polytmus (*Trochilus polytmus*), a large species, having the plumage mainly of a most exquisite green, with the top of the head jet black, and with the tail excessively long, inhabits only the island of Jamaica, and it is quite probable that every island of the West Indies produces species which are to be found in no other. In some sections, they are exceedingly numerous. Mr. Gosse, in his valuable volume on the Birds of Jamaica, mentions having seen “no less than a hundred come successively to rifle the blossoms within the space of half as many yards in the course of a forenoon.” We have been informed of instances of the ruby-topaz Humming Bird (*T. moschitus*) having occurred in the island of Trinidad in even greater abundance.

In allusion to the general abundance of these birds in the countries where they abound, and as a sketch of their habits, we transcribe the following from “A Voyage up the Amazon,” from an excellent observer and agreeable writer, our friend, Mr. William H. Edwards, of New York :

“Wherever a creeping vine opens its fragrant clusters, or wherever a tree

flower blooms, may these little birds be seen. In the garden, or in the woods, over the water, everywhere, they are darting about ; — of all sizes, from one that might easily be mistaken for a different variety of bird, to the tiny Hermit (*Trochilus rufigaster*), whose body is not half the size of the bees buzzing about the same sweets. Sometimes they are seen chasing each other in sport with a rapidity of flight and intricacy of path the eye is puzzled to follow. Again circling round and round, they rise high in mid-air, then dart off like light to some distant attraction. Perched upon a little limb, they smooth their plumes and seem to delight in their dazzling hues ; then starting off leisurely, they skim along, stopping capriciously to kiss the coquetting flowerets. Often, two meet in mid-air and fight furiously, their crests and the feathers on their throats all erected and blazing, and altogether pictures of the most violent rage. Several times we saw them battling with large black bees, who frequent the same flowers, and may be supposed to interfere often provokingly. Like lightning, our little heroes would come down, but the coat of shining mail would ward off their furious strokes. Again and again would they renew the attack, until their anger had expended itself by its own fury, or until the apathetic bee, once roused, had put forth powers that drove the invader from the field."

The Mexican Humming Birds have been, until recently, but little attended to, and even at this time are by no means well known. In an interesting volume by Mr. William Bullock, a Fellow of the Linnean Society of London, "Six Months Residence and Travels in Mexico" (London, 1824), a work that contains much information on the natural history, and especially the ornithology, of that country, there is a chapter exclusively devoted to the Humming Birds. From it, we make the following extract, which may be regarded as the more interesting, as some of the species alluded to may be found hereafter in those parts of the United States contiguous to Mexico :

"In Mexico, the species of Humming Birds are numerous. Near the capital, on my arrival, scarcely one was to be seen ; but in the month of May and June, numbers were found in the Botanic Garden, in the centre of the city ; and, by offering a reward to the Indians, many were brought to me alive. I had nearly seventy in cages, which, with attention and care, I kept living for some weeks ; and could I have devoted my whole attention to them, I have no doubt of the possibility of bringing them alive to Europe.

"It is probable the whole of them feed on insects ; numbers I am certain do so, having watched them attentively in the Botanic Garden at Mexico, in pursuit of their minute prey ; and in the yard of the house in which I resided at Themascaltepec, where one of them took entire possession of a pomegranate tree in blossom, on which he sat the whole day, catching the small flies that came to the flowers.

"Although, like the Robin and other birds of Europe, in a state of nature, they are extremely tenacious of any intrusion of their own species on their dominions, yet, in captivity, when several kinds have been confined together,

I never observed the least inclination to quarrel, but have seen the smaller take what appeared to be unwarrantable liberties with those of five times their size and strength;—thus, when the perch has been occupied by the great blue-throated one, the diminutive Mexican Star has settled on the long beak of the former, and remained perched on it some minutes, without its offering to resist the insult.

“Europeans who have seen only the stuffed remains of these little feathered gems in museums, have been charmed with their beautiful appearance; but those who have examined them whilst living, displaying their moving crests, throats, and tails, like the peacock in the sun, can never look with pleasure on their mutilated forms. I have carefully preserved about two hundred specimens, in the best possible manner, yet they are still but the shadow of what they were in life. The reason is obvious; for the sides of the laminae, or fibres of each feather, being of a different color from the surface, will change when seen in a front or oblique direction; and as each lamina or fibre turns upon the axis of the quill, the least motion, when living, causes the feathers to change suddenly to the most opposite hues. Thus the one from Nootka Sound (*T. rufus*) changes its expanded throat from the most vivid fire color to light green; the topaz-throated does the same, and the Mexican Star changes from bright crimson to blue.

“The sexes vary greatly in the plumage in many species, so much so, that it is with difficulty we recognize them. The male and female of the Mexican Star (*Cynanthus Lucifer*) could not have been known had they not been seen constantly together, and proved to be so by dissection. They breed in Mexico in June and July, and the nest is a beautiful specimen of the architectural talent of these birds; it is neatly constructed with cotton or the down of thistles, to which is fastened on the outside, by some glutinous substance, a white flat lichen resembling ours.* The female lays two eggs, perfectly white, and large for the size of the bird, and the Indians informed me they were hatched in three weeks, by the male and female sitting alternately. When attending their young, they attack any bird indiscriminately that approaches the nest. Their motions, when under the influence of anger or fear, are very violent, and their flight rapid as an arrow; the eye cannot follow them, but the shrill, piercing shriek which they utter on the wing, may be heard when the bird is invisible, and often led to their destruction by preparing me for their approach. They attack the eyes of the larger birds, and their sharp needle-like bill is a truly formidable weapon in this kind of warfare.

“Nothing can exceed their fierceness when one of their own species invades their territory during the breeding season. Under the influence of jealousy, they become perfect furies; their throats swell, their crests, tails, and wings, expand; they fight in the air (uttering a shrill noise), till one falls exhausted to the ground. I witnessed a combat of this kind near Otumba,

during a heavy fall of rain, every separate drop of which I supposed sufficient to have beaten the puny warriors to the earth.

"In sleeping, they frequently suspend themselves by the feet, with their heads downwards, in the manner of some parrots.

"These birds were great favorites with the ancient Mexicans. They used the feathers as ornaments for their superb mantles in the time of Montezuma, and in embroidering the pictures so much extolled by Cortez. Their name signifies, in the Indian language, beams or locks of the sun. The feathers are still worn by the Indian ladies as ornaments for the ears."

It may be properly remarked here that the statement made by Mr. Bullock, of the habit of these birds sleeping with their heads downwards, has attracted considerable attention, and it has been thought probable that he may have been mistaken, or misinformed, not having been confirmed by subsequent naturalists. It may, however, apply only to some species.

The pugnacity of these little birds is almost universally alluded to by writers who have enjoyed opportunities of observing them in the countries where they abound. A Humming Bird of any size, even the smallest, is not on that account less a fighting character, and jealous of whatever rights and privileges he considers himself entitled to. But as both of the authors above quoted, have alluded to this point, we beg the indulgence of the reader to lay before him another extract especially relating to this hostility of disposition, and happily illustrative of the fights and feuds of the Humming Birds. It is from the very pleasant and valuable little work, previously mentioned, on the Birds of Jamaica, by Mr. Philip Henry Gosse; and the species alluded to, the Mango Humming Bird (*T. mango*), is one which is considerably larger than the common ruby-throated species of the United States. It is abundant in the West Indies, and in some parts of South America, and it occasionally visits the shores of Florida. It is figured by Mr. Audubon:—

"A Mango Humming Bird had, every day, and all day long, been paying his *devoirs* to these charming blossoms" (the Malay apple, *Eugenia malaccensis*). "On the morning to which I allude, another came, and the manœuvres of these two tiny creatures became highly interesting. They chased each other through the labyrinth of twigs and flowers, till, an opportunity occurring, the one would dart with seeming fury upon the other, and then with a loud rustling of their wings, they would twirl together, round and round, until they nearly came to the earth. It was some time before I could see, with any distinctness, what took place in these tussles; their twirlings were so rapid as to baffle all attempts at discrimination. At length, an encounter took place pretty close to me, and I perceived that the beak of the one grasped that of the other, and thus fastened, both whirled round and round in their perpendicular descent, the point of contact being the centre of the gyrations, till, when another second would have brought them both to the ground, they separated, and the one chased the other for about a hun-

dred yards, and then returned in triumph to the tree, where, perched on a lofty twig, he chirped monotonously and pertinaciously for some time; — I could not help thinking, in defiance. In a few minutes, however, the banished one returned, and began chirping no less provokingly, which soon brought on another chase and another tussle. I am persuaded that these were hostile encounters, for one seemed evidently afraid of the other, fleeing when the other pursued, though his indomitable spirit would prompt the chirp of defiance; and, when resting after a battle, I noticed that this one held his beak open, as if panting. Sometimes they would suspend hostilities to suck a few blossoms, but mutual proximity was sure to bring them on again with the same result. In their tortuous and rapid evolutions, the light from their ruby necks would now and then flash in the sun with gem-like radiance; and as they now and then hovered motionless, the broadly-expanded tail, — whose outer feathers are crimson-purple, but when intercepting the sun's rays, transmit orange-colored light — added much to their beauty. A little *Banana Quit* (*Certhiola flaveola*), that was peeping among the blossoms in his own quiet way, seemed now and then to look with surprise on the combatants; but when the one had driven his rival to a longer distance than usual, the victor set upon the unoffending Quit, who soon yielded the point, and retired, humbly enough, to a neighboring tree. The war, for it was a thorough campaign, a regular succession of battles, lasted fully an hour, and then I was called away from the post of observation. Both of the Humming Birds appeared to be adult males."

In the United States, there have been discovered as yet not more than five species of Humming Birds, including that which is presented to the reader in our present plate. They are the ruby-throated Humming bird (*Trochilus colubris*), which is the much-admired little species everywhere common in the summer-time, in the States on the Atlantic; the Mango Humming Bird (*T. mango*), an abundant South American and West Indian species that occasionally visits Florida, as above stated; the Anna Humming Bird (*T. Anna*), a species of California and Mexico, the most beautiful of the northern species, and which derives additional interest from the fact that it was named by an eminent French naturalist, in honor of Anna, Duchess of Rivoli, whose husband, General Massena, Duke of Rivoli, the distinguished officer of the armies of the Emperor Napoleon I., founded the ornithological collection which now belongs to the Academy of Natural Sciences of Philadelphia. In addition to these, are the rufous-throated or Northern Humming Bird (*T. rufus*), a western species, which extends its range on the Pacific coast to a high northern latitude, and the bird now before us. Another species or two have been named as inhabiting California, without it being stated whether the upper or lower divisions of that country was intended. They are not known to inhabit that portion which is one of the States of this Union, though it is quite probable that others of the numerous Mexican

species will be found extending their range into the western and southwestern territories.

Within the limits of the United States, the Humming Bird now before the reader, has been noticed only by Dr. Heermann, whose fine collection made in California contained numerous specimens. He detected it in one locality only, which was the burying-ground at Sacramento city. There several pairs remained during the season of incubation, and reared their young, finding suitable food and protection amongst the flowering plants, with which, with great feeling and propriety, that last resting-place of the emigrant and stranger has been adorned.

Dr. Heermann represents the nest as composed of fine mosses, lined with the feathery down of various seeds, and containing two white eggs. He saw this bird also at Guaymas, in Mexico.

The figures in our plate are of the size of life, and represent adult males. The plant represented is *Odontoglossum Cervantesii*, a native of Mexico.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS TROCHILUS. Linnæus, Syst. Nat., I. p. 189. (1766.)

Size small, in some species diminutive, and the smallest of birds; bill slender, frequently straight, and also frequently curved, acute; wings comparatively large, generally pointed and formed for rapid flight; quills flattened, first primary longest, and curved inwards; tail various; legs and feet very short and feeble. The birds of this group are exclusively American.

TROCHILUS ALEXANDRI. Bourcier and Mulsant, Annals of the Royal Society of Physical and Natural Sciences of Lyons, IX. p. 330. (1846.)

FORM. Small; bill long; nearly straight; wings rather short; first quill longest, and somewhat curved; tail rather short, marginated, with its feathers narrow and pointed; legs and feet very short and weak.

DIMENSIONS. Total length of skin, about $3\frac{1}{2}$ inches; wing, $2\frac{1}{10}$; tail, 1 inch.

COLOR. Entire upper parts golden green; dark on the head; wings and tail brownish-black, except the central feathers of the latter, which are green; throat brilliant purple, with violet reflections, which color is succeeded by a broad transverse band of white; other under parts golden green, mixed with pale brownish and ashy; bill and feet dark.

HAB. California and Mexico. Spec. in Mus. Acad., Philada.

OBS. This bird is about the size of, or slightly larger than the ruby-throated Humming Bird (*T. colubris*) of North America, and resembles it in the general distribution of its colors. Those of the throat are, however, entirely different. The two species belong evidently to the same subdivision of the old genus *Trochilus*, which is, however, given so differently by late

authors, that we have not at present determined the relative claims of either. It is given by one as belonging to the genus *Mellisuga*, and by another as *Trochilus* proper, in a restricted sense.

The study of the Humming Birds, now difficult, will be rendered easy by Mr. Gould's great work on these birds, now in the course of publication. All the known species are to be figured of the size of life; and in the parts already published, the drawing and coloring is exceedingly accurate, and magnificent beyond any precedent in the literature of ornithology.

In the old world, the Humming Birds are represented by the Sun Birds (genus *Cinnyris*, Cuvier; *Nectarinia* of some authors), numerous species of which inhabit Africa and Southern Asia. They partake in some measure of the habits of the Humming Birds, and also of their lustrous colors, many of the species being very beautiful.

Several naturalists and admirers of ornithology have formed special collections of Humming Birds, and there are now extant several which contain very nearly all the known species, of which may be mentioned those of Mr. Edward Wilson, and Mr. John Gould, in England, and of Messrs. Edward and Jules Verreaux, in Paris. That of the first named, who is an American gentleman resident in England, is the most extensive and complete, and includes several of the only specimens known of the species which they represent. This gentleman and his brother, Dr. Thomas B. Wilson, of Philadelphia, have won for themselves the imperishable respect and gratitude of American naturalists, by forming in their native city the most extensive library and collections in natural history in America, and, in some departments, unrivalled by any in the old world. For these, now constituting, mainly, the magnificent museum and library of the Academy of Natural Sciences of Philadelphia, it is indebted to the distinguished patrons of zoological science whom we have just mentioned.

EMBERIZA BILINEATA. — CASSIN.

THE BLACK-THROATED FINCH.

PLATE XXIII. — ADULT MALE.

THIS curious little Finch was discovered in Texas, in 1849, by Mr. John W. Audubon, a son of the celebrated ornithologist, and himself a naturalist and zoological draughtsman of high merit and accomplishments.

It appears to be extensively diffused throughout Mexico, Texas, and New Mexico, and in the former country is a common species. In the States last mentioned, it has been noticed by nearly all the naturalists who have visited them; though, as a bird of the United States, little beyond the fact of its existence in those regions has been placed on record, or has otherwise come to our knowledge.

In Mexico, this bird was found by Lieut. Couch to be numerous in some parts of Tamaulipas, Nueva Leon, Coahuila, and other States on the Rio Grande, immediately south and west of the limits of the territory of the United States. For our present article, this gentleman has very kindly furnished the following interesting communication, for which and other similar favors we beg to tender our grateful acknowledgments:—

“This bird was first seen at Santa Rosalia, and specimens were obtained. Though a month had been spent at Brownsville, in Texas, only about twenty miles distant, it had not been observed. At Charco Escondido, forty miles farther in the interior, it was very plentiful, and early in March, seemed to have already reared a brood of young; one specimen procured, having the appearance of being a young bird but a few weeks old.

“Its favourite home appears to be the scattered Mesquite or Acacias that sprinkle the plains east of the Sierra Madre. Like many other birds of its family, it does not seek the shade during the warmer hours of mid-day, but may always be found chirping and hopping from one bush to another, apparently as much for the pleasure of enjoying the society of its fellows as to seek for food.

“After striking south from Cadorecita, this little bird suddenly disappeared, much to my regret, as I had become so accustomed to seeing it constantly during my daily marches, that I almost regarded it as a travelling companion. But after nearly a month's absence, I again recognized it among some flowering *Leguminosa*, between Pesqueria and Rinconada. I afterwards ascertained that it would thus be entirely absent from districts of considerable extent, but always reappeared again throughout my journey, and was always welcome.



The Black-throated Finch

Emberiza bilineata Cassin

"The usual note of this bird at the season in which I saw it, is a simple chirp; but one day, having halted during a *norther*, in the State of Tamaulipas, I amused myself watching a party of adult and young birds of this species, in the neighboring bushes. One gay little black-throated fellow, who was probably the father, showed unusual uneasiness at my presence, which fact led me particularly to observe him. After carefully reconnoitering and apparently satisfying himself that there was no immediate danger, he flew off a few yards to the top of a yellow mimosa then in bloom, and, regardless of the bitter wind still blowing, gave utterance to a strain of sprightly and sweet notes, that would have compared favorably with those of many a more famed songster of the feathered race. This was the only time that I ever heard this species indulge in anything more than a single chirp."

This little Finch was observed at various localities in Texas by gentlemen attached to the commission for running the boundary line between the United States and Mexico.

The figure in our plate, which is that of an adult male from Lieut. Couch's collection, is about two-thirds of the size of life.

The plant represented is *Spirea Douglasii*, a native of western North America.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS EMBERIZA. Linnæus, Syst. Nat., I. p. 308. (1766.)

EMBERIZA BILINEATA. Cassin, Proc. Acad., Philada., V. p. 104. (Oct. 1850.)

FORM. Rather short and compact; fourth quill slightly longest, but nearly equalled by the third and fifth; legs rather long and robust; tail moderate.

DIMENSIONS. Total length, about $5\frac{1}{2}$ inches; wing, $2\frac{1}{2}$; expanse from tip to tip, 8; tail, $2\frac{3}{8}$ inches.

COLORS. *Adult*. — Superciliary stripe over the eye, and another from the corner of the lower mandible, white. Large space on the throat and neck before black, which is also the color of the lores. Cheeks and entire upper parts brownish-cinereous, darker, and tinged with olive on the back; quills hair-brown, with nearly white external edgings; tail feathers brownish-black, the two central palest, and the external feather, with its outer web, white, and with a large spot of white on its inner web, near the tip, — in some specimens the two outer tail feathers are largely tipped with white. Entire under parts white, tinged with ashy and olive, especially on the sides and flanks; bill dark bluish or horn color; feet dark. *Young*. — Throat and other under parts white, with some longitudinal stripes of brownish-black; upper parts as in adult, but more tinged with brown; wing-coverts edged with brownish-white.

HAB. New Mexico and Texas; Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

Obs. This Finch resembles no other species known to us, in such a degree as would render it liable to be confounded with it. It may be easily recognised when adult by its black throat, bordered on each side by a conspicuous white stripe, and having also another equally conspicuous and well-defined stripe over the eye. In the young there is no vestige of the black throat, that part being of a uniform color with the under parts of the body, but bears a strong general resemblance to the adult. It is related to the group designated *Euspiza* by authors, though it is probably the type of a distinct subdivision.



The Black-headed Vireo

VIREO ATRICAPILLUS. — WOODHOUSE.

THE BLACK-HEADED FLYCATCHER.

PLATE XXIV. — ADULT MALE.

ON account of their modest attire and sylvan habits, the birds of the group to which the present species belongs, are seldom noticed by the general observer, though some of them are to be met with commonly during the summer, in nearly all parts of the United States. But though inconspicuous in appearance, they make ample compensation by the loudness of their notes, which, after the early love-songs of the Thrushes, and other of our songsters of spring, have subsided into the more serious duties of parental responsibility, are to be heard above those of any other of our resident birds. They are active insect-catchers, and may be seen at nearly all hours of the day, patiently searching amongst the leaves and branches of the trees in almost every woodland, hopping from branch to branch, or sometimes making short sallies in pursuit of fugitive moths or butterflies, and occasionally pausing to refresh themselves with a rather quaint but very melodious warble, lengthened in the spring into a cheerful and agreeable song.

The red-eyed Flycatcher (*V. olivaceus*) is the most numerous, and not only is constantly to be met with in the woods, but ventures confidently into the public squares or parks, and the yards and gardens of the cities. In many such localities in Philadelphia, several of which are in the denser parts of the city, this little warbler rears its young, and pipes out his sprightly song, in entire security, and apparently feeling himself as much at home as if in the recesses of the most remote forest. The warbling Flycatcher (*V. gilvus*) is another pleasing singer, though in our opinion but an indifferent performer compared with the preceding. A species common in the West Indies, and which has been found in Florida, has some very singular notes, from one combination of which he has had assigned to him a name quite as singular, the "Whip Tom Kelly" (*V. altiloquus*).

The immediate relatives, however, of the little species before the reader in the present plate, are birds that rarely venture far from the woods. One of them, the White-eyed Flycatcher (*V. noveboracensis*), has a partiality for marshes and low grounds producing thick growths of vines and shrubbery; and although the smallest of his tribe has some quite remarkable notes, and so loud, that a person not sufficiently acquainted with him to recognise his voice, would be surprised to find such a high-sounding solo proceed from such a diminutive performer.

The species represented in our present plate is an inhabitant of Texas, but it has as yet been only observed in a very limited district. It was discovered by S. W. Woodhouse, M. D., of Philadelphia, while attached to Capt. Sitgreave's Surveying party. It is the handsomest bird of this group.

The following notice of this bird by Dr. Woodhouse, we take the liberty of extracting from Sitgreave's report of an expedition down the Zuni and Colorado rivers:

"On the twenty-sixth of May, 1851, while encamped on the Rio San Pedro, within about ten miles of its source, I was out in pursuit of specimens. Wandering about the hills among some cedars (*Juniperus*), my attention was first attracted by a singular note, which I am unable to describe; on looking, I discovered this beautiful little bird, which I at first took to belong to that interesting family of fly-catching warblers, *Sylvania*, it being constantly in motion. It was with the greatest difficulty that I could procure specimens; two, however, I secured, both of which, on dissection, proved to be males."

Mr. John H. Clark, zoologist attached to the Mexican boundary commission, who observed this species in Texas, and near the same locality at which it was found by Dr. Woodhouse, has very obligingly made for us the following note from his journal:

"My attention was drawn to this bird by a shrill, discontented chirp which accompanied its incessant motion in pursuit of insects. Three specimens only were seen, and all of them at one locality, near the head of the Rio San Pedro, or Devil's River, to the valley of which it appeared to be confined, for, being aware of its novelty to the fauna of the United States, I kept a strict look-out, but did not meet with it elsewhere.

"It was not at all shy, showing no concern when approached within a few rods. The procuring of a specimen was, however, a matter of some difficulty, as its constantly hopping or flying from branch to branch rendered an unobstructed shot the next thing to an impossibility. It was found in June, and the specimen obtained by me, now in the collection of the commission, is that of a male."

Our figure is of the natural size.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS VIREO. Vieillot, Ois d'Am., Sept. I, p. 83. (1807.)

Size small; bill rather short, strong, wide at base, compressed towards the point, which is curved downwards, and sharp; upper mandible with distinct notches near the point; nostrils basal, large; wing moderate or rather short, with the third and fourth quills usually longest; tail rather short; legs long, rather slender. An American genus, containing six species. The Red-eyed Flycatcher (*V. olivaceus*), and others of the long-billed species, are not included, but have properly been embraced in a new group, *Vireosylvia*, Bonaparte.

VIREO ATRICAPILLUS. Woodhouse, Proc. Acad., Philada., VI. p. 60.
(April, 1852.)

FORM. Small, but compact, and rather broad; bill rather short, acute; wing with the third and fourth quills equal; tail rather short, even at the end, or slightly emarginate.

DIMENSIONS. *Male*.—Total length, $7\frac{1}{2}$ inches; wing, $2\frac{1}{4}$; tail, $1\frac{3}{4}$; expanse of wings, $7\frac{1}{4}$.

COLOR. *Male*.—Head above and cheeks black; stripe before the eye, and entire under parts, white, tinged with greenish-yellow on the sides and flanks; back, rump, and upper tail-coverts, dark olive-green; quills brownish-black, with a greenish tinge, and edged externally with greenish-yellow; wing-coverts tipped with greenish-white; tail feathers brownish-black, edged externally with greenish-yellow; bill and feet dark; iris light red.

HAB. Texas. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

Obs. This is a very distinct and peculiar species of this genus, not at all resembling any other, and readily distinguished by its black head. It belongs, however, strictly to the same group as *V. flavifrons*, *V. solitarius*, *V. noveboracensis*, and others, and is one of the most interesting of the more recent additions to the ornithology of the United States.

PICOLAPTES BRUNNEICAPILLUS.—LAFRESNATE.

THE BROWN-HEADED CREEPER.

PLATE XXV.—ADULT MALE.

THIS is a species belonging to a large family of birds, very numerous in the tropical and southern regions of the American continent, though of which not more than two species are known to venture so far north as to come within the limits of the United States. They subsist on insects, which they capture on the trunks and branches of trees, or, in the countries where such plants abound, on the large species of *Cactus*, and others of a similar character.

Some of the larger birds of this group have very long and singularly curved bills, which it is supposed are peculiarly adapted to searching for insects in the deep furrows or interstices of the rough barks of trees. All have more or less strong feet and claws, designed for their manner of creeping on trees, somewhat similar to that of the Woodpeckers, but more like the Nuthatches, or little Sapsuckers, as they are commonly designated in the United States, and the Brown Creeper of our woods (*Certhia americana*). The latter is in fact the only northern representative of the family to which our present species belongs, but so small, that it conveys but a faint idea of the form and colors of these birds generally. They are, however, for the greater part, birds of plain colors, frequently brown of various shades, or snuff-colored.

The bird figured in the present plate was first noticed in Texas, by Capt. J. P. McCown, of the United States Army, and is given by Mr. Lawrence as an addition to the ornithology of the North in the *Annals of the New York Lyceum of Natural History*, V. p. 114 (1851), but with no account of its habits. Since that time, it has been again observed by Mr. Clark at several localities in Texas, and is known to be of frequent occurrence in the States of Mexico immediately south of the Rio Grande, and in other parts of the same country.

The Brown-headed Creeper was seen by Dr. Heermann in Mexico, and in his paper in the *Journal of the Philadelphia Academy*, II. p. 263, he thus mentions it:—

“I found this bird in the arid country back of Guaymas, on the Gulf of California. The country itself is the picture of desolation, presenting a broken surface, and a confused mass of volcanic rocks, covered by a scanty vegetation of thorny bushes and *cacti*. In this desert I found several inter-



The brown headed Creeper.

Picolaptes brunneicapillus. Latreille.

Dr. Stone, by Wm. H. Litchcock

Lith. Printed & Col^d by J. T. Bowen Phil.

esting species, which enter into our fauna as birds of Texas, and this species was one of the number. It appeared to be a lively, sprightly bird, uttering at intervals a clear, loud, ringing note. The nest, composed of grasses, and lined with feathers, was in the shape of a long purse, laid flat between the forks or on the branches of a *Cactus*. The entrance was a covered passage, varying from six to ten inches in length. The eggs, six in number, are of a delicate salmon color, very pale, and often so thickly speckled with ash and darker salmon-colored spots, as to give a rich cast to the whole surface of the egg."

In the original description of this bird by the Baron La Fresnaye, an eminent French ornithologist, in *Guerin's Magazine of Zoology*, 1835, p. 61 (Paris), his specimen is represented as being probably from California. It has not been noticed in that country by either of our American naturalists, though found by Dr. Heermann, as above stated, near Guaymas, in Northern Mexico.

Our figure is rather less than two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS PICOLAPTES. Lesson, *Traite d'Ornithologie*, I. p. 313. (1831.)

Bill moderate, or rather long, curved, rather wide at base, but compressed towards the end; apertures of the nostrils large; wings rather short, rounded; first quill short; fourth, fifth, and sixth, usually longest and nearly equal; tail moderate, or rather long, soft at the end; legs and feet rather large and robust; claws curved, sharp. An American genus, nearly allied to others, and containing numerous species.

PICOLAPTES BRUNNEICAPILLUS. Lafresnaye, *Guerin's Mag. de Zoologie*, 1835, p. 61.

FORM. Bill curved; culmen distinct; wings short; tail rather long; tarsi and toes strong, and covered with scales; tail wide, with its feathers broad and soft.

DIMENSIONS. Total length of skin, about $8\frac{1}{4}$ inches; wing, $3\frac{1}{2}$; tail, $3\frac{1}{2}$ inches. Female rather smaller.

COLORS. Entire plumage above, brown, darkest and unspotted on the head; but on other upper parts with every feather having a central stripe or oblong spots of white, disposed to form longitudinal stripes; quills with numerous spots of white on the edges of their outer webs, forming somewhat regular oblique stripes, and on their inner webs with regular transverse stripes of white; tail, with its central two feathers, grayish-brown, transversely barred with brownish-black; other tail feathers brownish black, with irregular wide transverse bands of white, more numerous on the two outermost feathers.

Under parts white, tinged with fulvous on the flanks and abdomen; feathers of the throat and neck before tipped with black; those of other under parts with circular or oblong spots of black, large on the under tail-coverts; bill and feet horn-color. Sexes alike.

HAB. Texas and Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington.

OBS. This bird somewhat resembles several of its genus, but is not difficult to distinguish. In many specimens, especially of the male bird, the black predominates on the throat and neck before, so as to present an almost uniform color.

Several late writers have placed this species in the genus *Campylorhynchus* (Spix).



The Ferruginous Buzzard

Archibuteo ferrugineus (Lachapote)

Drawn by W. E. Hatchcock

Lith. Printed & Col^d by J. T. Bowen Phil

ARCHIBUTEO FERRUGINEUS.—(LICHTENSTEIN).

THE FERRUGINOUS BUZZARD.

PLATE XXVI.—ADULT AND YOUNG.

THIS is one of the largest and most handsomely plumaged of the Rapacious birds of North America, though belonging to a division characterized by heavy and comparatively slow flight, and not manifesting any considerable degree of that courage and cunning which are generally so remarkable in this great group of the ornithological kingdom. In fact, on examination of the fine bird now before us, or of the Black Hawk of the Atlantic States, which is nearly related to it, one would scarcely infer that the object of such an admirable organization is nothing more important than the destruction of the smallest and most defenceless of quadrupeds or of reptiles. Yet such is apparently the case; many of the birds of this group, though powerful in structure, and furnished with the usual apparatus of strong and sharp bills and claws, and other accompaniments of predatory habits, rarely attack any animal more formidable than a mouse or ground-squirrel, or in some cases a frog or other of the weaker species of reptiles.

It is, however, entirely erroneous to attribute a noble or generous character to any of the predatory animals, though from an early period of history several species have been so regarded. On the contrary, there is in all these classes, whether of birds or of other animals, a marked absence of the very traits which are in some measure assigned to them, and even more unmistakably so in some of the more celebrated, as the Eagles and Lions, than in the more humble species. Yet the rapacious animals present a study in natural history of deep interest. Owing the sustaining of their existence for the greater part to rapine and violence, yet holding an important place in the great design of the physical universe, they appear to personate a principle, if we may be allowed to use the expression, involving one of the most momentous and mysterious of problems, the existence of evil in the world. The prowling and treacherous Lion, and the robber Wolf, have unfortunately but too strong analogies in that race which is the head of the visible creation, and they and their kind everywhere present the same intrinsic meanness which is characteristic of violence and injustice, of vice and of crime amongst men.

The bird now before the reader is, so far as known, exclusively a Western species. It was first made known to American naturalists by Mr. Edward

M. Kern of this city, who, when attached as artist to Colonel Frémont's Expedition of 1846, obtained it in California and brought home specimens in a collection made by him, of the birds of that country. It had however been previously noticed and described as a bird of California by Professor Lichtenstein, a distinguished European naturalist, in a paper on the natural history of that country, in the Transactions of the Royal Academy of Berlin (1838, p. 428).

Since Mr. Kern, the only American naturalist who has noticed this bird is Dr. Heermann, who has met with it during both of his visits to California, but especially during his connection with a party under command of Lieut. Williamson, of the U. S. Topographical Engineers, which has recently completed an examination and survey for a route for a Railroad to the Pacific Ocean through the southern portion of the territory of the United States. For our present article, Dr. Heermann has with great kindness allowed us to make the following extract from his journal, kept during the survey to which we have alluded:

"During a previous visit to California, I had seen this species in the valley of the Sacramento river, and had considered it as rare in that section of the country, but during the recent survey in which I have been engaged in the southern part of the state, I found it very abundant, and on one occasion saw five or six individuals in view at the same moment, in the mountains, about sixty miles east of San Diego. It was there much more frequently seen than any other species.

"As large tracts of that country inhabited by this bird are often entirely without trees, it alights on the ground or on some slightly elevated tuft of grass or a stone, where it sits patiently for hours watching for its prey. Its food, on dissection, I found to consist almost entirely of small quadrupeds, principally various species of mice, and in one instance the crop was filled with the remains of a ground-squirrel. In plumage it appears to vary as much as its allied species, *A. sancti-johannis*. One specimen, which was shot by a soldier attached to our party, had the tail strongly tinged with the red color which characterizes that appendage in the red-tailed Hawk, (*B. borealis*).

"I have several times seen a bird sailing over the prairies, about the size of the present species, but with its entire plumage deep-black and of heavy and continued flight. It was I think certainly of this genus; but never having been so fortunate as to have procured a specimen, I am unable to decide whether it was this bird, the Black Hawk (*A. sancti-johannis*), or a new species to add to this group. My impression is that it was the Black Hawk, but it may have been the present in a stage of plumage yet undescribed.

"The nest and eggs of the present bird I procured on the Consumnes river, in 1851. The nest was in the forks of an oak and was composed of coarse twigs and lined with grasses; the eggs, two in number, were white, marked with faint brown dashes. This nest was placed in the centre of a

large bunch of *Mistletoe*, and would not have been discovered, but having occasion to climb the tree to examine some Magpie's nests, the Hawk in flying off betrayed her retreat. The eggs of this species are quite different from those of the European *A. lagopus*, but with those of *A. sancti-johannis*, I have never had an opportunity of comparing them."

Mr. Kern's specimens are marked as having been procured in the Tulavie valley, California, in January, 1846. He observes, in his notes in our possession, that finding this bird remarkably fat and in excellent general condition, some of the party shot it for the mess-kettle whenever opportunity offered, and found it "very good eating." Possibly under stress of capital appetites.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS ARCHIBUTEO. Brehm. in Oken's Isis, 1828, p. 1269.

Tarsi feathered in front to the toes, but more or less naked behind. General form, compact and heavy; wings, long and broad, formed for long-continued but not very rapid flight; bill, short, curved, edges of the upper mandible festooned; tail, moderate, wide, tarsi rather long; toes, short; claws, moderately strong, curved, very sharp. Contains about six species, three of which are American.

ARCHIBUTEO FERRUGINEUS. (Lichtenstein.)

BUTEO FERRUGINEUS. Licht. Trans. Berlin Academy, 1838, p. 428.

ARCHIBUTEO REGALIS. Gray, Genera of Birds, 1 pl. 6 (1849, plate only).

FORM. Robust and compact; bill, rather large; wings, long, with the third quills longest, all the primaries more or less incised on their inner webs near the end; tarsi feathered in front to the toes, naked and scaled behind; toes, short; claws, strong.

DIMENSIONS. Total length (of skin), female, about 22 inches; wing, 16½ to 17; tail, 9 inches.

COLOR. *Adult*.—Tibiæ and tarsi bright ferruginous, with transverse stripes of brownish-black, irregular and indistinct on the latter. Entire upper parts with irregular longitudinal stripes of dark-brown and light ferruginous, the latter color predominating on the shoulders and rump. All the upper plumage white at the bases of the feathers, and on the back with concealed irregular transverse stripes of brownish-black. Quills, ashy-brown, lighter on the outer webs, and with a part of the inner webs white, and with obscure brown bands. Tail, above, ashy-white, tinged with pale ferruginous, and mottled obscurely with ashy-brown, in some specimens narrowly tipped with black; tail, beneath, yellowish-white, unspotted. Entire under parts of the body white, slightly tinged with yellowish, with narrow longitudinal lines and dashes of reddish-brown on the breast, and narrow irregular transverse lines of the same color, and others of black, on the sides, flanks, and

abdomen ; under tail coverts, white ; axillary feathers and some of the inferior coverts of the wing, bright ferruginous ; toes, yellow ; bill and claws, dark.

Young.—Entire upper parts dark umber-brown, a few feathers edged and tipped with pale ferruginous ; upper coverts of the tail white, spotted with dark-brown ; entire under parts pure white, with a few longitudinal lines and dashes of dark brown on the breast, and arrow-heads or irregularly shaped spots of the same color on the sides and abdomen, larger and more numerous on the flanks. Tibiæ and tarsi white, irregularly spotted with dark-brown ; axillary feathers, white, with large subterminal spots of brown ; under wing coverts and edges of the wings white, with a few brown spots ; under tail coverts, white.

HAB. California. (Mr. Kern, Dr. Heermann.) Spec. in Mus. Acad., Philada.

OBS. This very distinctly characterized species somewhat resembles some stages of plumage of the Rough-legged Hawk and of the Black Hawk (*Archibuteo lagopus* and *sancti-johannis*) but not sufficiently to render it necessary to point out differences. It has, as yet, only been observed in California, but will, very probably, like many other species of Western birds, be found to inhabit also the northern regions of this continent.



The Black headed Gnat catcher.

Culicivora alricapilla (Nutt.)

CULICIVORA MEXICANA.—BONAPARTE.

THE BLACK-HEADED GNAT-CATCHER.

PLATE XXVII.—MALE AND FEMALE.

THIS delicate little bird is an inhabitant of Texas, where it was first noticed by Capt. J. P. McCown, of the U. S. Army. He obtained it near Ringgold Barracks, in 1850, since which period specimens have been brought in the collections of various other officers and naturalists. It is also known as a bird of Mexico.

This species belongs to a small group of little fly-catching birds, of which several others are found in America, though two of them only come within the limits of the fauna of the United States. Of these, one, the little blue gray Fly-catcher (*Culicivora cærulea*), has been long known as a summer resident in the woods and forests of the Middle and Northern States, and is one of the earliest to return, from its winter journey in the south, to its northern home. The other is the bird now before the reader.

These little Fly-catchers are amongst the smallest of our native birds. They almost exclusively inhabit the woods, and are constantly seen actively engaged in the capture of the minute insects on which they feed, in pursuit of which they search very industriously, not only shrubbery, but trees of the greatest height. The present is the smaller of the two northern species, and is represented in our plate of the size of life.

For the following memorandum relating to this little bird we are again indebted to the kindness of Dr. Heermann:

"I first met with this species near San Diego, California, in 1851, and during the recent survey found it abundant in the vicinity of Fort Yuma. Its habits much resemble those of the Blue-gray Gnat-catcher of the Eastern States (*Culicivora cærulea*), it is very quick in its movements, searching actively for food, preferring, apparently, the low trees and bushes, and at times darting about in the air in pursuit of small insects. The only note that I ever heard it utter was a chirp, so feeble in its tone that it could be heard but a short distance.

"The last specimen procured by me was shot in a hedge bordering a field cultivated by the Pimos Indians, whose village is situated about two hundred miles above the junction of the Gila and Colorado rivers."

The figures in the present plate, which we regard as those of adult male and female, are of the size of life.

The plant is *Zauschneria californica*, a native of California.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *CULICIVORA*. Swainson, Zoological Journal, III., p. 359. (1827.)

Small, bill rather long, compressed towards the tip, wider at base, upper mandible somewhat curved, base with about five pairs of rather long, weak bristles; wing, moderate or rather short, first quill very short, fourth and fifth, longest and nearly equal; tail, long, with the feathers graduated, outer shortest; legs, long, slender; toes, rather short. Colors usually cinereous and black. A genus exclusively American and containing several species.

CULICIVORA MEXICANA. Bonap. Cons. Av., p. 316. (1850.)

FORM. Small and slender; bill, moderate, rather long; wings, moderate; tail, long, several of the central feathers equal, others shorter and graduated, outer feathers shortest; legs and feet, long and slender.

DIMENSIONS. Total length (of skin) about $4\frac{1}{4}$ inches; wing, $1\frac{3}{4}$; tail, $2\frac{1}{4}$ inches.

COLORS. *Male*.—Head, above, glossy black; upper parts of the body and wings, grayish-cinereous or lead-colored; lower parts very pale ashy-white, deeper on the sides and flanks; quills, brownish-black, edged externally with ashy-white; tail, black, the two outer feathers tipped with white, having their outer webs of that color, the next two also edged on their outer webs with white and tipped with the same, readily seen on the inferior surface of the tail; bill and legs, dark. *Female*, with the head above uniform with the other parts—not black—otherwise, like the male.

HAB. Texas, Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This species very much resembles the South American *Culicivora leucogastra*, De Wied, (which is *C. atricapilla*, Swainson,) but is smaller. We have never seen specimens of the present species with the under parts of such a clear white as is usual in the larger bird just mentioned, though it may assume it in its perfectly mature plumage. The South American bird measures in total length about five inches.

The Prince of Canino's description of *Culicivora mexicana* as cited above, we regard as applicable to the female of the present species. All the species of this genus more or less resemble each other, and now require careful revision, having the appearance to us of being rather confused than otherwise, and but imperfectly described.



The Prince Maximilian Fly

Controculia cyanocapitata (Cassin)

GYMNOKITTA CYANOCEPHALA.—(DE WIED.)

THE PRINCE MAXIMILIAN'S JAY.

PLATE XXVIII.—ADULT MALE.

WE have the pleasure of presenting to the reader, in the plate now before him, one of the most singular of the birds of the family of Crows and Jays yet known to inhabit North America.

This bird was discovered in the Rocky Mountains, by that learned and enthusiastic naturalist, Maximilian, Prince of Wied, who in the course of travels in North America, and especially in the interior, contributed a large amount of valuable information relating to the natural history of the northern portion of our continent, as he had previously to that of South America. Few books, in fact, contain more important observations in the various departments of North American Zoology than the work of that nobleman, "Travels in the Interior of North America,—edition in German, Coblenz, 1839;" but, unfortunately, and certainly without his approbation, nearly everything relating to natural history is omitted in the English edition, London, 1843. In Ornithology, the works of the Prince Maximilian are particularly valuable, and in that relating to North America, there are many notices of little known and interesting species, and the first descriptions of some which have since been regarded as previously unknown by American writers.

The present bird differs in generic as well as specific characters from all other forms of the family to which it belongs. Its short, heavy figure approximates it somewhat to the Nut-crackers of the old world (*Nucifraga*), and to Clark's Crow of Western America (*Picicorvus columbianus*), and its habits, so far as known, are in some respects similar to those of the latter. It does not appear, however, to be in any considerable degree a fruit-eater, but is decidedly carnivorous, and almost rapacious; preying on Reptiles, particularly the various species of *Phrynosoma*, or Horned Frogs, as they are called with but little propriety, which abound in Western North America. It appears, in fact, to resemble in habits, to some extent, the reptile-eating Kingfishers (*Genus Todiramphus*) of Asia, the Pacific islands and Australia, and if not absolutely allied, is certainly a strongly analogous representative of those curious birds.

The first specimens of this bird which were brought to the attention of American naturalists, were sent to the Philadelphia Academy, by Mr. Edward

M. Kern, who procured them during his connection with Col. Frémont's Expedition of 1846; and previously no others appear to have reached Europe, than those of its discoverer, the Prince Maximilian.

More recently it has been observed by several of the naturalists who have visited Western America. Our friend, T. Charlton Henry, M. D., of the United States' Army, has noticed it repeatedly in the vicinity of Fort Webster, in New Mexico. To him we have the pleasure of expressing our obligations for the following interesting notes relating to this bird, as well as for many others:

"This singular and handsome Jay, I first met with near San Miguel, in July, 1852, where I observed a party of some twenty or thirty specimens flitting through the cedars along the roadside. They were mostly young birds, and constantly alighted on the ground, for the purpose, as I ascertained, of capturing lizards, which they killed with great readiness and devoured.

"Since that time, I have frequently observed this bird in the winter only, in the neighborhood of Fort Webster, and always in flocks of about forty or fifty; indeed I am not sure that I have not repeatedly fallen in with the same flock, and it may not therefore be as abundant as I am inclined to suppose. Here they evince an exceeding wariness and are very difficult to approach; I have chased a flock for hours without succeeding in getting within gun-shot.

"Almost invariably a flock alights near the summit of a hill, and passes down its side rapidly, all the birds keeping quite near to each other, and individuals frequently alighting on the ground, when their attention is attracted by their favorite food. They appear to be very social and keep up a continued twittering note. I have occasionally seen them flying in close flocks, high in the air, and apparently passing from one mountain or hill to another.

"This bird, so far as I have seen, is exclusively a mountain species, as I have never observed it in the plains or the bottom lands, which are the usual haunts of its relatives, Steller's and the California Jay. It differs, however, from them in many respects, and is the only species of these birds that I have never met with singly or in parties of half-a-dozen individuals only. I have always seen it in large flocks. Its food appears to be exclusively reptiles."

C. B. R. Kennerly, M. D., a young naturalist of great promise, who was attached as Zoologist to Lieut. Whipple's party, for surveying a route for a railroad to the Pacific Ocean, brought fine specimens of the bird now before us, in the large and highly interesting collection of birds made by him in the countries traversed by the expedition. To Dr. Kennerly we are indebted for the following notice of this species:

"During the march of our party from the Rio Grande to the Sierra Madre, we saw this bird nearly every day. At that season, which was November, large flocks were constantly found in the vicinity of the running streams, which on being frightened from the low bushes, circled around, loudly uttering their peculiar cry, and rising higher and higher, until they reached the summit

of some tree on the rocky hills. When settled, they continued their discordant notes, which somewhat resemble some of those of the common Cat-bird (*Mimus felivox*)."

The Prince Maximilian's specimens of this bird were obtained on Maria's river, one of the tributaries of the Upper Missouri, in the northern part of the possessions of the United States in Western America, and much farther north than it has been observed by either of the late naturalists. It probably inhabits a very extensive district, the limits of which cannot at present be conjectured.

The figure in the present plate is that of the adult male, and is about two-thirds of the natural size.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS GYMNOKITTA. De Wied in Bonap. Consp. Av., p. 382. (1850.)

General form, rather short, robust; bill, straight, wide at base, somewhat rounded and flattened at the point, ridge of the under mandible (or gonys) very distinctly ascending; wings, rather long, first quill very short, fourth, longest, but only slightly longer than the third and fifth; tail, moderate, containing twelve feathers; legs and feet, strong.

GYMNOKITTA CYANOCEPHALA. (De Wied).

GYMNORHINUS CYANOCEPHALUS. De Wied, Travels in North America (1839, Coblenz).

CYANOCORAX CASSINI. McCall, Proc. Acad. Philada., V. p. 216. (1851.)

FORM. Bill, straight, wide at base, blunt and rounded, and somewhat flattened towards the point; wings, rather long, secondaries, broad and mostly obtuse at their ends; tail, moderate, tarsi rather long, moderately robust, and with the toes distinctly scaled; claws, curved, rather strong and sharp.

DIMENSIONS. Total length (of skin), about 10 inches; wing, 6; tail, $4\frac{1}{2}$; bill, from gape, $1\frac{1}{2}$ inches.

COLORS. *Adult*.—Throat, white, tinged with bluish running into stripes on the neck before. Entire other plumage, above and below, ashy-blue, much darker and clearer on the head, palest on the abdomen, tibiae and under wing coverts. Cheeks and frontal feathers, pale ultramarine; bill and claws dark; irides, light-brown—sexes alike.

HAB. New Mexico, Nebraska. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This species does not resemble any other in such degree as to readily lead to confusion, and as yet stands alone in its genus.

The bird described by Col. McCall, as above, and to which he did us the honor to apply our name, he has since ascertained to be the present species,

of which, at the time of the publication of his description, no specimen was exhibited in the nearly complete collection of Jays in the museum of the Philadelphia Academy, nor had it ever been mentioned by any American ornithologist. He observed it in the vicinity of Santa Fé, in considerable numbers.

Although as we have said above, nearly the whole of the valuable Zoological notes in the German edition of the Prince Maximilian's Travels, are omitted in the English translation; two notices of the present species may be found in the latter, pp. 287, 297, the last of which is the description, and seems to have accidentally escaped the singular want of judgment which induced the omissions to which we allude.



The black Flycatcher

Ptilogonys nictens. Swainson

On Stone by W^m E. Hitchcock

Lith Printed & Col^d by J. T. Bowen, Phil

PTILOGONYS NITENS.—SWAINSON.

THE BLACK FLY-CATCHER.

PLATE XXIX. — ADULT MALE AND FEMALE.

THIS gracefully formed, but sombre-colored little bird was first added to the Ornithological fauna of the United States, by our valued friend, Colonel George A. McCall, Inspector General in the Army of the United States, who observed it, and obtained numerous specimens, while on a tour of duty in California, in 1852. It had previously been known as a Mexican species, having been described by Mr. Swainson, in 1838, from specimens sent from that country.

This bird belongs to a small group of Fly-catchers, containing not more than five or six species, all of which are inhabitants of either Western North America, Mexico, or the southern portion of this continent. They appear to possess the habits of true Fly-catchers, and are remarkable for their slender but active forms, in which the long and ample tail and the elongated feathers of the head, capable of being erected into a handsome crest, are generally conspicuous. The best known North American species is *Ptilogonys obscurus*, Lafresnaye (which is *Ptilogonys Townsendii*, Audubon), a bird that is now brought from the far west by nearly all collectors.

Respecting the curious little species which is the subject of our present article, we have the pleasure of laying before the reader the following notes very kindly furnished by Col. McCall.

“The first opportunity that I had for observing the manners of this bird, was afforded me in 1852, while travelling from *Valle-cita* to *El Chino*, in California. On that occasion, as I left the country bordering the desert, and began to ascend the hills, my route followed the course of a mountain brook, whose clear waters were at intervals shaded with gnarled and scrubby oaks. In approaching one of these clumps of trees, I remarked a number of dark-colored birds, which afterwards were found to belong to this species, darting upwards from the topmost branches, and after diving and pitching about in the air for a moment, returning again to the dead branches with the lively port that proved them to be engaged in the agreeable pastime of taking their insect prey. A nearer approach showed them to be light and graceful on the wing; but less swift and decided in their motions than most of the true Fly-catchers. There were about a dozen in company, and they presented a pleasing sight, as three or four together were constantly either pitching upwards to a considerable height in the air, or gliding silently back to their

perches. In these aerial evolutions, the bright spot on the wing, which is formed by broad patches of white on the inner webs of six or seven of the quill feathers, and is visible only when the wing is spread, gleamed conspicuously in the sunshine, and formed a fine contrast with the glossy black of the general plumage. I sat upon my horse, watching their movements for some time, and I now perceived that two of their numbers were of a dusky hue, and without the wing spot to which I have referred; but I could discover no difference in their manners or their style of flight. I, therefore, had little doubt of their being adult females; for although at that period of the year, (June 20) the young birds might have been well grown, yet there is generally a want of decided character in the unpractised flight of young birds, which betrays them to the sportsman's eye. In fact, these birds agreed with Swainson's description of the female in general terms; and my only regret is that I was not able to satisfy myself by dissection whether these to which I now refer were in reality adult females, or young males in their first plumage.

"However, on my attempting to approach still nearer, these birds became alarmed, and winging their way to the hill-side, alighted on the scraggy bushes scattered among large projecting rocks, where they resumed their sport, rising lightly into the air and darting about after insects, which seemed to be abundant. I followed—but they were now on the *qui vive*, and, without permitting me to get within gun-shot, flew from bush to bush, as I advanced, keeping all the while in a loose irregular flock, and still pursuing their sport of fly-catching. In this way they continued to ascend the hills, until the broken character of the ground abruptly stopped my horse. Having, however, dismounted, I clambered over the rocks, and at last succeeded in killing two of them. These were alike in plumage—black, with the wing spot; and one of them, which I dissected, proved to be a male.

"As I journeyed on towards the Sierra Nevada, I met, during several days succeeding, these birds, either in small companies, or singly; and subsequently I found a few individuals between *El Chino* and *Los Angeles*; but they were invariably black, with the white wing spot. And I never on any occasion, except the one I have referred to, saw one of those clad in dusky garments, which I had supposed were females.

"The localities in which I found these birds, were either on the mountain-sides, or in the timbered borders of mountain streams.

"The measurements of the fresh specimen were as follows—length, 8 inches; wing, $3\frac{1}{2}$; tail, $3\frac{1}{2}$.

"The figure slender—the feet rather strong."

This bird has also been noticed by Dr. Heermann, in various parts of California, and by Dr. Henry, and Dr. Kennerly, in New Mexico. To the former gentleman, we are indebted for the following contribution, intended for our present article:

"This bird is seldom found in the northern part of California, though I procured both adults and young on the Consumnes river, in 1851. Since then, however, a naturalist and friend of mine residing there has not seen a single other specimen, though giving much of his attention to ornithology, and to the migratory habits of such birds as pass through that section of country.

"I was therefore surprised to meet with this species after sixty miles of travel on the Colorado desert near the Little Lagoon. It was perched on a *Mesquite* tree, jerking its tail almost incessantly, as do various other species of Fly-catchers, and dashing occasionally in irregular curves and angles high into the air in pursuit of insects. On approaching the Colorado, this Fly-catcher became quite abundant, as I frequently saw companies of twenty or thirty together, many of which would be on the wing at the same time, engaged at their usual employment. At Fort Yuma, this species was also met with in considerable numbers late in November, when they were migrating southward. Its note is a low, plaintive whistle. This bird undoubtedly incubates in California, as I have seen specimens which were certainly very young birds, though I have not been so fortunate as to discover its nest."

Near Fort Webster, in New Mexico, Dr. Henry has seen this bird, though he considers it of rather rare occurrence. Dr. Kennerly noticed it in abundance during the months of February and March, on the route of Lieut. Whipple's party, from the Big Sandy creek to the Great Colorado river.

Our plate represents the adult male and female about two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *PTILOGONYX*. Swainson, Zool. Jour. III. p. 164. (1827.)

Bill, moderate, wide at base, upper mandible curved towards the end, and distinctly notched; wings, moderate or rather long, first primary very short, or rudimentary; tail, long; legs and feet, moderate. General form, rather slender; head frequently with elongated crest-like feathers. Contains several species of birds, all of which are American.

PTILOGONYX NITENS. Swainson. Lardner's Cab. Cy. Birds, Pt. III. p. 285. (1838.)

FORM. Slender; crest-like feathers of the head much elongated; wings with the fifth and sixth quills longest and nearly equal; tail, long, graduated.

DIMENSIONS. Total length (of skin) about $7\frac{1}{2}$ inches; wing, $3\frac{3}{4}$; tail, 4 inches.

COLORS. *Male*.—Entire plumage glossy black, with a greenish lustre, except a spot on the inner web of each primary quill, occupying about the middle third of its length, which is pure white. Bill and feet, black.

Female.—Entire plumage, except the tail, cinereous, tinged with olive on

the back and abdomen; superior wing coverts, and inferior tail coverts, edged and tipped with white. Quills, dark-brown—secondaries edged with white; tail, black, without lustre. *Young*—like the female; but in the males, with the spot on the primaries discernable, though more or less obscure.

HAB. California, New Mexico and Mexico. Spec. in Mus. Acad. Philada., and Nat. Mus., Washington city.

OBS. A remarkable resemblance exists between the bird now before us and two other species of Fly-catchers of another genus, *Fluvicola comata* (Licht.), and *Fluvicola nigerrima* (Vieill), both of which are natives of South America, and we have seen the latter also from Mexico. The three birds resemble each other in general form in a very considerable degree, and in colors are almost absolutely the same, the prevalent black of the plumage differing only in shade. Generic and specific distinctions can, however, readily be made out on comparison of specimens. *Fluvicola* has the bill longer and not so wide at the base and with much stronger bristles; the wings are differently constructed, the first primary being long and well developed, not short or rudimentary as in *Ptilogonys*. In those two species of *Fluvicola*, which differ from each other materially only in size, the white spot is more at the base of the wing feathers than in *Ptilogonys nitens*, in which it occupies the middle third of the primaries. *Fluvicola comata* is the same as *Blechnopus cristatus*, Swainson, in Naturalist's Library, Fly-catchers, p. 99, plate 7. No other species of *Ptilogonys* is black.



The Mexican Wren

Troglodytes mexicanus. *Say*

On Stone by W^m E. Hitchcock

Lith. Printed & Col. by J. T. Bowen & Co.

TROGLODYTES MEXICANUS.—(SWAINSON.)

THE WHITE-THROATED WREN.

PLATE XXX.—ADULT MALE.

IN the United States, the little House Wren is associated with so many pleasing recollections, and possesses such pre-eminently social and familiar habits, that one almost expects in all birds bearing the name of wrens, to find similarity of disposition, and perhaps similar regard from the people of other lands. But this is by no means the case. There is really but one House Wren, and that is the little fellow who comes punctually in the early spring, and evidently without a doubt of his being welcome to take possession of the box or other habitation of the previous season, perhaps of many seasons. And forthwith he commences housekeeping, which usually, if no accidental discouragements intervene, is very successful, as one may judge from the number of little heads soon to be seen by peeping in at the door of his domicile.

The Wren is, in this country, nearly as much of a household bird as the Robin, of Europe, and more than any other, not even excepting the Martin, is universally regarded with favor. He is, however, the only one of the numerous species of American Wrens that shows any disposition to cultivate the acquaintance of mankind, or at all to accept of any proffered hospitalities. Though the Carolina Wren and Bewick's Wren both venture occasionally into the garden or orchard, they are comparatively shy and apprehensive, apparently, of there being danger in too great familiarity.

The large species represented in our present plate is a native of Mexico and California, and lives exclusively in localities remote from the habitations of man. Though known as a bird of Mexico, it is not represented as an abundant species in that country, and within the limits of the United States has been observed only by Dr. Heermann, and Dr. Kennerly.

In his notes on the Birds of California, in the Journal of the Philadelphia Academy, II. p. 263, Dr. Heermann's observations on the present bird are as follows, and contain the first notice of this species as an inhabitant of the United States:

"I first met with this bird in the fall of 1851, on the Consumnes river, but in the spring of 1852, I procured three specimens on the Calaveras river. It is an active bird, having a loud sprightly song, that is heard at a considerable distance, and which it repeats at short intervals. I found it occupied in searching for insects between and under the large boulders of rock which, along some portions of this river, are thrown together in confused masses, as if by some terrific convulsion of nature."

Dr. Kennerly, during the survey recently completed by Lieut. Whipple's party, noticed this Wren in New Mexico, and obtained specimens now deposited in the National Museum at Washington city. For our present article he has very kindly favored us with the following note :

"This active little bird was observed only among the hills along the head waters of Bill Williams' fork. In the most rugged and inaccessible places it was generally found busily engaged in searching for food, rapidly passing around and among the rocks with great activity, and accompanying its movements with its short and peculiar chirp. It is so constantly in motion that specimens can only be obtained with difficulty."

This species was described by Mr. Swainson, from specimens sent to Europe from Real del Monte, in Mexico, and we have seen others from various parts of that country.

The figure in the plate now before the reader, is that of an adult male, and is about two-thirds of the size of life.

The plant represented is *Nemophila insignis*, a native of California.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS TROGLODYTES. Vieill, Nouv. Dict., XXXIV. p. 505. (1819.)

TROGLODYTES MEXICANUS. (Swainson.)

THRYOTHORUS MEXICANUS. Swainson, Zool. Ill., 2d series, I. p. (none), pl. 11.

FORM. Bill, long, slender and curved; wings, short, rounded, with the fourth and fifth quills longest; tail, rather long; legs and feet, moderately strong; claws, large.

DIMENSIONS. Total length (of skin) about $5\frac{1}{2}$ inches; wing, $2\frac{1}{2}$; tail, 2 inches.

COLORS. Throat and neck before, silky-white. Entire upper parts, reddish-brown, with minute circular or irregularly shaped spots of pure white, which are inserted in others of very dark-brown, nearly black; quills, dark-brown, spotted on their outer webs with ferruginous; tail, bright ferruginous, with about eight regular transverse bands of black. Entire under parts (except the throat and neck before, as above), bright ferruginous, rather darker than that of the tail, nearly every feather having a small irregularly shaped spot of white, joined to another of black; bill, light at the base, darker towards the tip. Sexes very nearly alike.

HAB. California, New Mexico, Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This very handsome Wren is not properly to be regarded as a true *Troglodytes*, but belongs to a small group or sub-genus, to which M. Cabanis has given the name *Salpinctes*. It does not particularly resemble any other species.

SYNOPSIS

OF

NORTH AMERICAN BIRDS.

III. FAMILY STRIGIDÆ. THE OWLS.

GENERAL form short and heavy, with the head apparently disproportionately large, and frequently furnished with ear-like tufts of feathers. Cavity of the ear, large; eyes, usually large, directed forwards, and in the greater number of species formed for seeing by twilight or in the night; bill, nearly concealed by projecting bristle-like feathers; wings, usually, rather long and formed for rather slow and noiseless flight, outer edges of primary quills fringed; tail, various, usually short; legs, generally, rather short, and in all the species, except those of the Asiatic genus *Ketupa*, Lesson, more or less feathered to the toes, generally densely; face surrounded by a more or less perfect disc or circle of short rigid feathers, which circle, with the large eyes directed forwards, gives to these birds an entirely peculiar and cat-like expression, indicative of their analogy to the *Feline* quadrupeds.

Female larger than the male. General organization adapted to the destruction of living animals in the night, or in the morning and evening twilight—midnight appears to be the noon of these birds, at which they are not disposed to activity.

Species of owls inhabit all parts of the world, most abundantly in America and Asia. There are about one hundred and forty described species, of which number, specimens of about one hundred and twenty are in the collection of the Academy of Natural Sciences of Philadelphia. The species inhabiting the continent and islands of America are about forty.

A.

I. SUB-FAMILY STRIGINÆ. THE TRUE OR TYPICAL OWLS.

Head, large; facial disc, perfect; bill, rather long; eyes, of moderate size; wings, long; tail, moderate; legs, rather long, clothed with short feathers; toes, long—size, medium, never very large; colors of plumage in the greater number of species, yellowish-fawn color and white.

I. GENUS STRIX. LINNÆUS SYST. NAT., I. p. 131. (1766.)

Head, large, without ear-tufts; cavity of the ear, large; bill, rather long, covered at the base by projecting, bristle-like feathers; eyes, rather small, and surrounded by radiated feathers; facial disc, perfect; wings, very long, pointed, and with the outer edges distinctly fringed; tarsi, long, thinly covered with feathers; toes, long, more or less covered with bristles; claws, long, moderately strong, curved, very sharp; tail, moderate, or rather long. Contains about twelve species of all parts of the world, nearly all of which resemble in a greater or less measure *Strix flammea*, of Europe, and *Strix pratincola*, of North America.

1. STRIX PRATINCOLA. Bonap. Comp. List., p. 7. (1838.) The Barn Owl.
 STRIX AMERICANA. Aud. Orn. Biog. II. p. 421 (1834, but not of Gmelin, 1788).

Wilson Am. Orn., VI. pl. 50., fig. 2. Aud. B. of Am. pl. 171, octavo edition, I. pl. 34. Nat. Hist. State of New York Birds, pl. 13, fig. 23.

Typical, and strictly exhibiting the generic characters.

ADULT. Entire plumage above, pale fawn color, or tawny brownish-yellow, in some specimens nearly white, mottled with dark-gray and white, especially on the back and wing coverts and outer webs of the quills, which mottling gives the predominating color of those parts to many specimens; nearly every feather with a small subterminal black spot succeeded by another of white. Quills, fawn-colored, or pale reddish-yellow, varying much in shade in different specimens, and fading into nearly white on the inner webs; primaries with about five irregular transverse bars of brownish-black. Under parts, generally pale fawn color, but in some specimens, pure white, with small sagittate, lanceolate or circular spots of brownish-black; tibiae and tarsi similar in color to the other under parts, but frequently unspotted and pure white; inferior coverts of the wing and tail, white; tail, same color as quills and crossed by four or five bars of dark-brown; face, white, with central spots of dark-chesnut nearly encircling the eyes, disc feathers tipped with dark fawn-color and brownish-black, forming a very conspicuous margin, especially on the lower part of the face; bill, toes and claws, light-yellowish; irides, brown. Distinctive colors of sexes not well understood, but they are, probably, nearly alike.

DIMENSIONS. *Female*, total length, about 16 inches; wing, 13; tail, 5½ inches. *Male*, smaller.

HAB. The whole of North America, except the northern regions; more abundant in the south. Wisconsin (Dr. Hoy), Vermont (Dr. Brewer, Mr. Z. Thompson), Massachusetts (Dr. Emmons), Oregon (U. S. Ex. Exp., Vincennes), California (Dr. Heermann), New Mexico (Dr. Henry), South Carolina (Mr. Audubon, Prof. Gibbs), Texas, Mexico (Lieut. Couch). Spec. in Mus. Acad., Philada.

OBS. This handsome species of Owl may be regarded as most properly a southern and western species, being of rather rare occurrence north of Virginia, though it breeds occasionally in the Northern States. It is nearly related to *Strix flammea* of Europe, but is larger. It very much resembles also several other species of various parts of the world, such as *S. perlata*

of South America, *S. furcata* of the island of Cuba, and others. Naturalists have, in fact, established species on very slender characters, amongst the owls of this group. It is a very harmless bird, resorting in the south to buildings and outhouses, and subsisting on small animals. Different specimens vary considerably in shade of color and somewhat in dimensions.

II. SUB-FAMILY BUBONINÆ. THE HORNED OWLS.

Size, various, in some species very large, in others, small; head, large, always furnished with conspicuous ear-tufts, facial disc incomplete in the upper part; legs, feet and claws usually strong. This division contains numerous species of all parts of the world, except Australia.

I. GENUS BUBO. CUVIER, REGNE ANIMAL, I. p. 331. (1817.)

Size, large; general form, very robust and strong; head, large, with prominent ear-tufts; eyes, very large; wings, long, wide; tail, moderate; tarsi short, and with the toes densely feathered; claws, very strong, curved; bill, rather short, curved from the base, strong, covered at base by projecting plumes. This genus contains the large horned Owls of which there are about fifteen species, the greater part being peculiar to Asia and Africa.

1. BUBO VIRGINIANUS. (Gmelin.) The great horned Owl. The Cat Owl.

STRIX VIRGINIANA. Gm. Syst. Nat. I. p. 287. (1788.)

STRIX PYTHAULES. Bartram Trav. p. 289. (1791.)

BUBO LUDOVICIANUS. Daudin Traite d'Orn. II. p. 210. (1800.)

BUBO PINICOLA. Vieill. Ois. d'Am., Sept., I. p. 51. (1807.)

Edward's Birds, II. pl. 60. Vieill., Ois. d'Am., Sept., I. pl. 19. Wilson, Am. Orn., VI. pl. 50. fig. 1. Aud., B. of Am., pl. 61, Oct. ed., I. pl. 39. Nat. Hist. N. Y., pl. 10, fig. 22.

Large, adult, entire plumage above, dark-brown, every feather mottled, and with irregular lines of ashy-white and reddish fulvous, the latter being the color of all the plumage at the bases of the feathers. Ear-tufts, dark-brown, nearly black, edged on their inner webs with dark fulvous, a black spot above and extending somewhat in front of the eye, radiating feathers behind the eye, dark reddish fulvous, feathers of the facial disc tipped with black; throat and neck before, white; breast, with wide longitudinal stripes of black; other under parts finely variegated with white and fulvous, and every feather having transverse narrow lines of dark-brown. In many specimens, the middle of the abdomen is pure white; legs and toes light fulvous, generally unspotted, but in some specimens, with transverse narrow bars of dark-brown; quills, brown, with wide transverse bands of cinereous, tinged on the inner webs with pale fulvous; tail, the same, with the pale fulvous predominating in the outer feathers; iris, yellow; bill and claws, dark.

The colors of the plumage, and the size also, in this species, vary materially. There may be distinguished the following varieties, which appear to be permanent in individual specimens, and are to some extent geographical. Though at present, with a large number of specimens before us, we are of opinion that they are all of one species, it may be that they are distinct

VARIETY, *atlanticus*.

The common species as just described. Feathers of the face behind the eye, always bright reddish fulvous, and the entire plumage more marked with that color than in the others, as below. This variety inhabits the eastern and northern portion of North America.

VARIETY, *pacificus*.

Feathers of the face, behind the eye, ashy, generally faintly tinged with fulvous. General plumage with the fulvous color paler than the preceding.

This variety appears to be restricted to the west, and nearly all the specimens that we have seen are of a smaller size than it is usual to find in the eastern bird, though we have seen specimens of the latter which were not larger.

VARIETY, *arcticus*.

BUBO ARCTICUS. Swainson, Faun. Bor. Am. Birds, p. 86, pl. 30. (1831.)

BUBO SUB-ARCTICUS. Hoy, Proc. Acad., Philada., VI. p. 211. (Dec. 1852.)?

BUBO SEPTENTRIONALIS. Brohm., Vog. Deutschl., p. 120. (1831.)?

STRIX SCANDIACA. Linn., Syst. Nat., I. p. 132. (1766.)?

Feathers of the face, pure white, or very pale cream color. General plumage, of a predominating pale yellowish-white, or cream color, of various shades in different specimens, sometimes nearly pure white, especially on the under parts, and always marked with brown, frequently very pale and indistinct, in the same general manner as in characteristic specimens of *B. virginianus*, var., *atlanticus*, but with the lines and stripes much less numerous and paler; tarsi and toes, nearly pure white. Size, in some specimens, quite as large as in the common variety, and the plumage with more or less of the same reddish fulvous at the bases of the feathers.

Of the specimens of this bird that we have seen, one is Dr. Hoy's original, and another was brought from California, by Mr. Bell. The latter is the smaller, and is probably a male. Dr. Hoy's specimen, which appears to be a large female, has the upper mandible with a more prominent lobe than is usual in specimens of this species.

VARIETY, *magellanicus*.

STRIX MAGELLANICUS. Gm., Syst. Nat., I. p. 286. (1788.) Buff. Pl. Enl., I. pl. 385.

STRIX NACURUTU. Vieill., Nouv. Dict., VII. p. 44. (1817.)

BUBO LUDOVICIANUS. Daudin, Traite d'Orn, II. p. 210?

Very similar to the common bird of eastern North America, and has all the plumage at base fulvous, very variable in color, frequently lighter than the common variety, but sometimes very dark; plumage behind the eyes, generally pale cinereous, but in some specimens more or less tinged with fulvous.

This variety inhabits, apparently, the whole of South America, and, probably, also southern North America.

DIMENSIONS. *Female*.—Total length, 22 to 25 inches; wing 15 to 16; tail, 10 inches. *Male*, total length, 17 to 21 inches; wing, 14 to 15; tail, 9 inches. The western and southern varieties producing smaller specimens than the eastern and northern.

HAB. The whole of North America, western South America; Hudson's Bay (Richardson); Canada (Dr. Hall); Wisconsin (Dr. Hoy); Washington territory (Dr. Cooper); Minnesota (Mr. Pratten); Vermont (Mr. Thompson); Oregon (Dr. Townsend); California (Dr. Heermann); Texas (Mr. Schott); Indian territory (Dr. Woodhouse); Mexico (Lieut. Couch). Breeds in Pennsylvania and northward. Spec. in Mus. Acad., Philada.

OBS. With numerous specimens before us from various parts of America, we are unable to recognise any differences sufficient to establish specific distinctions, and we have therefore provisionally designated the above four varieties. All of them vary considerably in shade of color in different specimens.

This is the largest owl of North America, except one, the Great Cinereous Owl (*Syrnium cinereum*) and, like several other species of large birds, retreats before the progress of the settlement of the country. Formerly abundant, it is now comparatively rare in the more thickly populated states, and appears almost entirely as a wanderer in winter.

Specimens are not frequently seen so dark nor so large as represented in Mr. Audubon's plate.

II. GENUS SCOPS. SAVIGNY, NAT. HIST. EGYPT, I. p. 105. (1809.)

EPHIALTES. KEYSERLING AND BLASIUS, WIRBELTH. EUR. p. 33. (1840.)

Size, small; head, large, with conspicuous ear-tufts; facial disc, imperfect above the eyes; bill, short, curved, nearly covered by projecting feathers; wings, long; tail, short, and generally slightly curved inwards; tarsi, rather long, and more or less covered; toes, long, partially covered with hair-like feathers; claws, rather long, curved, strong. General form short and compact. A genus containing about twenty-five species of small Owls of all parts of the world, except Australia.

1. SCOPS ASIO. (Linn.) The Mottled Owl. The Red Owl. The Screech Owl.

STRIX ASIO. Linn. Syst. Nat., I. p. 132. (1766.)

STRIX NÆVIA. Gm., Syst. Nat., I. p. 289. (1788.)

BUBO STRIATUS. Vieill., Ois d'Am. Sept., I. p. 54. (1807.)

Catesby's Carolina, I. pl. 7. Vieill., Ois. d'Am. Sept., I. pl. 21. Temm., Pl. Col. 80. Wilson, Am. Orn., pl. 19, fig. 1.; pl. 42, fig. 1. Aud., B. of Am., pl. 97. Oct. ed., I. pl. 40. Nat. Hist. N. Y., pl. 12, figs. 25, 26.

Short and compact; head, large; ear tufts, prominent; wing, with the fourth quill slightly longest; tail, short, somewhat curved inwards; tarsi, long, fully clothed with feathers; toes, hairy. **ADULT.** Entire plumage above, pale ashy-brown, nearly every feather with a longitudinal line, or stripe of dark brown, nearly black, and irregularly mottled, and with irregular transverse lines of brown, more or less tinged with ashy. Under parts, ashy-white, every feather with a longitudinal stripe of brownish black and with transverse lines of the same color; face and throat and tarsi ashy-white, irregularly lined and mottled with pale brownish; quills, brown, with transverse bands, nearly white on the outer webs, and pale ashy brown on their inner webs; tail, pale ashy-brown, with about ten transverse narrow bands of pale cinereous with a tinge of reddish; under wing-coverts, white, the larger tipped with black; bill and claws, light

horn-color; irides, yellow. YOUNGER. Entire upper parts, pale brownish-red, some feathers, especially on the head and scapulars, having longitudinal lines of brownish-black; under parts, white, some feathers with longitudinal stripes and lines of reddish-brown; feathers before the eyes, throat, under wing-coverts, and tarsi, white, frequently with a tinge of reddish; quills, reddish-brown, with transverse bands rufous on the outer webs, ashy on their inner; tail, rufous, with brown bands deeper on the inner webs. YOUNG. Upper parts, except the head, rufous; head and entire under parts transversely striped with ashy-white and pale brown. VERY YOUNG. Entire plumage transversely striped with ashy-white and pale brown, tinged with rufous on the wings and tail; white nearly pure on under surface of the body.

DIMENSIONS. Total length, $9\frac{1}{2}$ to 10 inches; wing, 7; tail, $3\frac{1}{2}$ inches. Male but slightly smaller.

HAB. The whole of North America; Greenland (Fabricius); Canada (Dr. Hall); Minnesota (Mr. Pratten); Ohio (Prof. Kirtland); Oregon (Dr. Townsend); California (Dr. Heermann); Long Island (Mr. Giraud); South Carolina (Prof. Gibbs); Indian Territory (Dr. Woodhouse). Breeds in Pennsylvania. Spec. in Mus. Acad., Philada.

OBS. This is one of the most abundant of the Owls inhabiting the States on the Atlantic seaboard. It presents two constant varieties of plumage, which have been regarded as distinct species; the mottled or gray described above as the adult, and the red described as younger. These two varieties appear to be very similar to those of the European *Syrnium aluco*, and to some other species.

The Rev. Dr. Bachman, of Charleston, S. C., has fully established the identity of the two, and we have fully confirmed the accuracy of his observations (in Aud. Orn. Biog., V. p. 392). The young birds, as stated by him, are red when fully feathered, or nearly so; but we have observed that previously they are transversely striped with brown and white, with but little tinge of red, and presenting a general appearance somewhat like the adult mottled bird. They pair and breed in the red plumage, and it is not unusual to find a mottled male and red female associated, or the reverse. According to Dr. Bachman, the perfect plumage is assumed at the age of two years. Intermediate specimens, impossible to be referred absolutely to either of the plumages, are not uncommon.

This bird holds its place throughout the country in spite of the constant destruction of the woodlands; and though universally known and scarcely regarded favorably by our people, is seldom molested. Its food is principally insects.

2. SCOPS McCALLII. Cassin. *New species*. (July, 1854.) The Western Mottled Owl.

In form and general appearance like the preceding (*S. asio*), but much smaller; short and robust; wing with the fourth quill longest; tail short, slightly curved inwards; tarsi rather long, fully covered; toes partially covered with long hair-like feathers. ADULT. *Male*.—Much resembling in color the adult of the species immediately preceding, but darker; entire plumage above, ashy-brown, nearly every feather with a longitudinal stripe of brownish-black, and with numerous irregular transverse lines and points of the same; under parts, ashy-white, every feather with a longitudinal stripe of brownish-

black, and with well-defined but irregular transverse lines of the same; flanks and sides tinged with pale fulvous; quills brown, with several transverse bands of pale reddish-white, assuming the form of quadrangular spots on the outer webs, and pale reddish-ashy on the inner webs; tail, ashy-brown, with about ten narrow transverse bands on all except the two central feathers, well defined on the inner webs; scapular feathers and some of the greater coverts of the wings, edged with white; bill greenish horn-color, light yellowish at the tip; irides, yellow.

DIMENSIONS. Total length, $7\frac{1}{2}$ to 8 inches; wing, 6; tail, 3 inches. *Male.* *

HAB. Texas (Mr. Schott); Northern Mexico (Lieut. Couch). Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This species very considerably resembles the adult or grey plumage of the *Scops asio*, but is uniformly much smaller and darker in color. The transverse lines on the under surface of the body are better defined and more numerous. It also somewhat resembles *Scops choliba* of South America, under which name we suppose the female of the present bird to be alluded to by Mr. Lawrence, in *Annals N. Y. Lyceum*, VI. p. 4.

This interesting species we have taken the liberty of dedicating to our esteemed friend, Col. McCall, as a slight memento of long-continued and unbroken friendship, and in testimony of our high appreciation of him as a naturalist, who has contributed much of interest and importance, especially to the ornithology of Western America.

III. GENUS OTUS. CUVIER, *REGNE ANIMAL*, I. p. 327. (1817.)

Head moderate, furnished with erectile ear-tufts, varying in size in different species; bill rather short, nearly concealed by projecting bristle-like feathers, curved from the base; facial disc more perfect than in the two preceding genera; wings rather long, with the second and third quills longest; tail moderate; legs long; tarsi and toes densely covered with feathers; claws long, curved, very acute; eyes rather small, and surrounded by radiating feathers; facial disc nearly perfect. Contains about ten species of various parts of the world.

1. OTUS WILSONIANUS. Lesson, *Traite d'Orn.*, I. p. 110. (1831.) The long-eared Owl.

OTUS AMERICANUS. Bonap., *Comp. List.*, p. 7. (1838.)

STRIX AMERICANA. Gm., *Syst. Nat.*, I. p. 288. (1788)? Bonap., *Cons. Av.*, p. 30.

STRIX PEREGRINATOR. Bartram, *Trav.*, p. 289. (1790)?

Wilson, *Am. Orn.*, VI. pl. 51, fig. 1. Aud., *B. of Am.*, pl. 283, octavo ed., I. pl. 37. *Nat. Hist. N. Y.*, pl. 11, fig. 24.

Ear-tufts long and conspicuous; wings long; tarsi and toes densely feathered. ADULT. Entire plumage above mottled with very dark brown (nearly black), ashy-white and fulvous, the former color, brown, predominating; breast pale fulvous, every feather with a wide longitudinal stripe of brownish-black; abdomen white, every feather with a wide longitudinal stripe, and with transverse stripes of brownish-black; legs and toes pale

fulvous, usually unspotted, but in some specimens with irregular transverse narrow stripes of dark brown; eye nearly encircled with black, radiating feathers of the face in front of the eye ashy-white, with minute black lines, behind the eye deep fulvous, and narrowly tipped with black; throat white; feathers of the disc tipped with black; ear-tufts brownish-black, edged with ashy-white and fulvous; quills pale fulvous at their bases, with irregular transverse bands of brown, terminating portions brown, with yellowish, ashy, irregular bands, which are mottled with brown; inferior coverts of the wings pale fulvous, in some specimens nearly white, the larger inferior coverts widely tipped with brownish-black, forming a conspicuous transverse band on the under surface of the wing; tail brown, with several irregular transverse bands of ashy fulvous, which bands are mottled as on the quills; bill and claws dark; irides yellow. Sexes probably alike at the same ages.

DIMENSIONS. *Female*.—Total length, about 15 inches; wing, $11\frac{1}{2}$; tail, 6 inches. *Male*.—Smaller.

HAB. Northern and Eastern North America. Breeds in Pennsylvania. Hudson's Bay (Richardson and Swainson); Canada (Dr. Hall); Oregon (Dr. Townsend); Washington Territory (Dr. Cooper); Nebraska (Dr. Suckley); Massachusetts (Dr. Emmons); Long Island (Mr. Giraud).

OBS. This is one of the commonest species of Owls in the Northern and Eastern States on the Atlantic. It much resembles the European *Otus vulgaris*, with which American authors have generally considered it identical, but it is larger and darker colored. It is a shy and secluded species, seldom venturing far from the woods, and appears to be a constant resident in the middle and northern States.

2. OTUS BRACHYOTUS. (Forster.) The Short-eared Owl. The Marsh Owl.

STRIX BRACHYOTOS. Forster, Philos. Trans. London, LXII. p. 384. (1772.)

BRACHYOTUS PALUSTRIS AMERICANUS. Bonap., Cons. Av., p. 51. (1849.)

OTUS GALAPAGOENSIS. Gould, Proc. Zool. Soc., London, 1837, p. 10?

Wilson, Am. Orn., IV. pl. 33, fig. 3. Aud., B. of Am., pl. 410; Oct. ed., I. pl. 28. Nat. Hist. N. Y. Birds, pl. 12, fig. 27.

Ear-tufts very short and inconspicuous; bill short, curved, nearly concealed by projecting feathers; wings rather long, second quill longest; tail moderate; tarsi and toes densely feathered. **ADULT.** Entire plumage buff or pale fulvous, every feather with a wide central longitudinal stripe of dark brown; under parts pale buff color, striped longitudinally with brown, more sparingly on the flanks and abdomen; legs and toes buff, usually of a deeper shade than the under parts of the body; wing-coverts and secondary quills brown, with large ovate or circular spots of pale reddish fulvous on their outer-webs; primaries pale reddish fulvous at their bases, brown at their ends, with wide irregular bars, and large spots of reddish fulvous; tail pale fulvous, with about five irregular transverse bands of brown, which color predominates on the two central feathers; outermost feathers palest; under tail-coverts nearly pure white; throat white; eyes surrounded by large black spots; radiating feathers in front of the eyes white, behind the eyes fulvous, with delicate lines of black on the shafts of the feathers; ear-tufts brown, widely edged with pale fulvous; bill and claws dark; irides yellow. Sexes alike.

DIMENSIONS. *Female*.—Total length, about 15 inches; wing, 12; tail, 6 inches.
Male.—Smaller.

HAB. The whole of North America and Western South America. Greenland (Prof. Holboll); Canada (Dr. Hall); Washington Territory (Dr. Cooper); California (Dr. Heermann); Chili (Lieut. Gillis); Bermuda (Sir W. Jardine); Cuba (Mr. Lembeze).

OBS. This Owl is of frequent occurrence, especially in the winter season, throughout the Eastern States of the Union, and appears to prefer meadows and marshes along the course of rivers or other streams of water. We have met with it, too, occasionally in straggling bushes in fields remote from such localities.

This bird has been almost universally considered identical with the bird known by the same name, which is found throughout Europe and Asia; but it is nearly or quite as distinct as some other American birds of this family recognised on all hands as separate species. On comparison of series of specimens of the two, it will be found that the American are larger, and for much the greater part darker colored, especially the females. The name *brachyotus* is, however, applicable to the American species only, having been first applied by Forster to an American specimen in his "Account of the Birds sent from Hudson's Bay, with observations relative to their Natural History," in the Philosophical Transactions of the Royal Society, London, 1772.

We have had no facilities for comparing the stages of plumage of the young of the American and European or Asiatic species, but have no doubt they will be found to present sufficient distinctive characters. We have omitted the many synonymes of the European bird, for reasons above intimated.

Otus galapagoensis, Gould, is scarcely to be distinguished from our present bird. Admitting the genus *Brachyotus*, Gould, we think it very probable that the name of the present species ought to stand *Brachyotus galapagoensis* (Gould).

Very fine specimens of this Owl are contained in the large and highly interesting collection of birds made in Chili, by Lieut. Gilliss, of the United States Navy. It appears to inhabit the plains on the Pacific, and nearly all the specimens are of a deeper shade of fulvous than is usually met with in those of the North, though we have seen specimens of the latter precisely similar to them.

III. SUB-FAMILY SYRNIINÆ. THE GREY OWLS.

Head large, with very small and concealed ear-tufts, or entirely without; facial disc nearly complete; eyes rather small; wings rather short; tarsi and toes generally fully feathered. Size various.

I. GENUS SYRNIUM. SAVIGNY, Nat. Hist. Egypt, I. p. 112. (1809.)

Size usually large; head large, without ear-tufts; facial disc nearly perfect; bill rather strong, wide at base, curved from its base; wings long, somewhat rounded, fourth and fifth quills longest; tail long, wide, rounded;

legs moderately long, robust; tarsi and toes densely covered with short feathers; claws long, curved, very sharp. A genus containing fifteen to twenty species of various parts of the world, principally northern.

1. *SYRNIUM CINEREUM*. (Gm.) The Great Gray Owl. The Cinereous Owl.

STRIX CINEREA. Gmelin, Syst. Nat., I. p. 291. (1788.)

STRIX LAPPONICA. Retzius, Faun. Suec., p. 79. (1800.)

STRIX FULIGINOSA. Shaw, Gen. Zool., VII. p. 244. (1809.)

STRIX BARBATA. Pallas, Zool. Ross., I. p. 318. (1811.)

STRIX ACCLAMATOR. Bartram, Trav., p. 289. (1790.)?

Fauna., Bor. Am. Birds, pl. 31. Aud., B. of Am., pl. 351: Oct. ed., I. pl. 35. Nat. Hist. N. Y. Birds, pl. 13, fig. 29. Pallas, Zool. Ross., Birds, pl. 2. Gould, B. of Europe, I. pl. 42.

Large; head very large; eyes small; tail long. ADULT. Entire upper parts smoky-brown, nearly every feather more or less mottled and transversely barred with ashy-white; under parts smoky-brown; feathers on the breast edged with ashy-white, and on the abdomen edged and transversely barred with ashy-white, in some specimens all the feathers are ashy-white, with wide longitudinal stripes of smoky-brown; legs brown, with numerous ashy-white transverse stripes; quills brown, with about five wide irregular transverse bands of ashy-white, in some specimens tinged with reddish-yellow, these bands mottled with brown; tail brown, with about five wide irregular bands of ashy-white, which bands are mottled with brown; throat black; discal feathers on the neck tipped with yellowish-white; eye nearly encircled by a black spot; radiating feathers around the eye with regular transverse narrow bars of dark brown and ashy-white; bill pale yellow; claws pale, dark at their tips. Sexes alike.

DIMENSIONS. *Female?*—Total length, 26 inches; wing, 18; tail, 12 inches.

HAB. Northern North America. Northern Europe and Asia. Breeds in the vicinity of Montreal, Canada (Dr. Hall); Wisconsin (Dr. Hoy); Oregon (Dr. Townsend); Vermont (Mr. Thompson). Spec. in Mus. Acad., Philada.

OBS. This is the largest known species of the Owls which inhabit North America, and is restricted on the Atlantic to the Northern States. In Western America its range is not known, but it was brought from Oregon by Dr. Townsend. In the valuable "Sketch of the Zoology of the vicinity of Montreal, Canada," by Archibald Hall, M. D., the manuscript of which has been kindly and most opportunely placed in our hands by that gentleman, it is stated that this fine bird is a resident species in that district.

2. *SYRNIUM NEBULOSUM*. (Forster.) The barred Owl.

STRIX NEBULOSA. Forster. Trans. Philos. Soc., London, LXII. p. 386, 424. (1772.)

"*STRIX VARIUS*. Bartram, MSS." Barton, Frag. Nat. Hist. Penna., p. 11. (1799.)

STRIX CHICHICTLI. Gm., Syst. Nat., I. p. 296. (1788.)?

STRIX FERNANDICA. Shaw, Gen. Zool., VII. p. 263. (1809.)?

Viell., Ois. d'Am., Sept., pl. 17. Wilson, Am. Orn., IV. pl. 33, fig. 2. Aud., B. of Am., pl. 46; Oct. ed., I. pl. 36. Nat. Hist. N. Y. Birds, pl. 10, fig. 21. Gould, B. of Europe, I. pl. 46.

Smaller than the preceding; head large; tail moderate or rather long. **ADULT.** Entire plumage above light ashy-brown, in some specimens with a tinge of fulvous, every feather with transverse narrow bands of white, wider on the back and most numerous on the head and hind part of the neck; plumage of the breast with transverse bands of brown and of white; flanks and abdomen ashy-white, every feather with a longitudinal central stripe of brown; tarsi and toes ashy-white, tinged with fulvous, frequently unspotted, but in some specimens mottled and transversely striped with dark brown; quills brown, with about six or seven transverse bars nearly pure white on the outer webs, and on the inner ashy fulvous; tail light brown, with about five transverse bars of white, generally tinged with reddish-yellow; a black spot in front of the eye; discal feathers tipped with white, and finely barred with black, radiating feathers around the eye ashy-white, with stripes of brown behind the eye; throat dark brown; bill pale yellow; claws horn-color; irides bluish-black. Sexes alike.

DIMENSIONS. *Female*.—About 20 inches; wing, 13½; tail, 9 inches. *Male*.—Smaller.

HAB. The whole of North America. Accidental in Northern Europe. Canada (Dr. Hall); Minnesota (Mr. Pratten); Texas, New Mexico (Dr. Woodhouse); South Carolina (Prof. Gibbs); Florida (Mr. Audubon). Spec. in Mus. Acad., Philada.

OBS. A species frequently met with in nearly all parts of the United States, especially in the winter. Occasionally we have seen specimens in the woods, that showed no signs of alarm whatever on being approached, and apparently not at all familiar with man nor with the sound of the gun. During some winters it is abundant in Pennsylvania, probably having migrated from farther north. When wounded, this species seeks safety by hopping away quite awkwardly, showing nothing of the courage of the Great Horned Owl, or even of the comparatively small long-eared species (*Otus Wilsonianus*), both of which will stand up manfully and defend themselves to the best of their ability, while life lasts.

II. GENUS NYCTALE. BREHM, Isis, 1828, p. 1271.

SCOTOPHILUS. SWAINS. LARDNER'S CAB. CY. BIRDS, II. p. 217. (1837.)

Size small; head large, with no visible ear-tufts; bill moderate, nearly concealed by projecting plumes; facial disc nearly perfect; wings moderate or rather long; tail short; tarsi and toes short and fully feathered. A group containing not more than five species of small Owls, four of which are American, and the other European.

1. NYCTALE RICHARDSONI. Bonap. Comp. List., p. 7. (1838.) Richardson's Owl.

“*STRIX TENGMALMI*. Gm.” Aud., Orn. Biog., IV., p. 559, and other American authors.

Fauna., Bor. Am. Birds, pl. 32. Aud., B. of Am., pl. 380, figs. 1, 2; Oct. ed., I. pl. 32.

The largest of this genus; wings rather long, third quill longest; tail rather long. **ADULT.** Entire upper parts pale reddish-brown, tinged with olive, nearly all the feathers having large partially concealed spots of white, especially on the back part of the head, neck behind, scapulars, and rump; head in front with numerous spots of white; face

white, a black spot in front of the eye; throat with brown stripes; under parts ashy-white, every feather with a longitudinal stripe of pale reddish-brown, on the breast some irregular transverse stripes of brown, and in some specimens the white on the sides and flanks assuming the form of large circular spots; legs and toes pale yellowish, nearly white, sometimes irregularly barred and spotted with brown; quills brown, with small spots of white on their outer edges, and large spots of the same on their inner-webs, somewhat disposed to form transverse stripes, very obvious when seen from below; tail brown, every feather with about ten pairs of white spots; bill light yellowish horn-color; claws dark; iris yellow.

DIMENSIONS. *Male*.—Total length, $10\frac{1}{2}$ inches; wing, $7\frac{1}{2}$; tail, $4\frac{1}{2}$ inches. *Female*.—Larger.

HAB. Northern North America. Maine (Mr. Audubon); Canada (Dr. Hall); Wisconsin (Dr. Hoy); Oregon (Dr. Townsend). Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. Entirely a northern species, which, though common in the vicinity of Hudson's Bay, and on the Saskatchewan, may be regarded as of rare occurrence within the limits of the eastern United States. It is, however, found more frequently on the Pacific. We have never known an instance of this bird having been captured in Pennsylvania. It much resembles the European *Nyctale funerea* (which has also been extensively called *Strix Tengmalmi*), but is larger and different in other respects.

2. NYCTALE ACADICA. (Gmelin.) The Acadian Owl. The Saw-Whet.

STRIX ACADICA. Gm., Syst. Nat., I. p. 296. (1788.)

STRIX ACADIENSIS. Lath., Ind. Orn., I. p. 65. (1790.)

"STRIX PASSERINA. Linn." Wilson, Am. Orn., IV. p. 66.

STRIX DALHOUSIEI. Hall MSS. Macgillivray ed. of Cuv. Reg. An. Birds, pl. 8, fig. 3, name on plate (Edinburg, 1839).

Lath., Gen. Syn., I. pl. 5, fig. 2. Wilson, Am. Orn., IV., pl. 34, fig. 1. Aud., B. of Am., pl. 199; Oct. ed., I pl. 33. Nat. Hist. N. Y. Birds, pl. 11, fig. 23.

Small; wings long; tail short; claws slender. Resembles the preceding, but is much smaller. Entire upper parts reddish-brown, tinged with olive, on the head in front with fine central longitudinal lines of white, and on the neck behind, scapulars and rump with large concealed spots of white; face ashy-white; throat white; under parts white, nearly every feather having a wide longitudinal stripe of pale reddish-brown; under coverts of the wings and tail white; quills brown, with small spots of white on their outer edges, and large spots of the same on their inner-webs, very conspicuous when viewed from below; tail brown, with about three pairs of white spots; bill and claws dark; iris yellow.

DIMENSIONS. Total length, $7\frac{1}{2}$ to 8 inches; wing, $5\frac{1}{2}$; tail, $2\frac{3}{4}$ to 3 inches.

HAB. The whole of North America. Canada (Dr. Hall); Wisconsin (Dr. Hoy); Northern Ohio (Prof. Kirtland); Oregon (Dr. Townsend); California (Dr. Gambel); Kentucky, Louisiana (Mr. Audubon). Spec. in Mus. Acad., Philada.

OBS. This is the smallest Owl that inhabits the eastern and middle States of North America, and is of rather frequent occurrence as far south as Pennsylvania. Repeated instances of this little bird having been captured

alive in the city of Philadelphia, have come to our knowledge. It appears to be strictly nocturnal, and when discovered in the daytime, is generally quite bewildered, if disturbed, and apparently nearly incapable of seeking safety by flight. The first specimen that ever we met with, we killed with our gun ramrod. That was long ago, in the bright days when natural history was the dream of our youth.

3. NYCTALE ALBIFRONS. (Shaw.) The White-fronted Owl. Kirtland's Owl.

STRIX ALBIFRONS. Shaw, Nat. Misc., V. p. (not paged.) (1794.)

STRIX FRONTALIS. Lichtenstein, Trans. Berlin Acad., 1838, p. 430.

NYCTALE KIRTLANDII. Hoy, Proc. Acad., Philada., VI. p. 210. (1852.)

Cassin, B. of Texas and Cal., I. pl. 11. Shaw, Nat. Misc., V. pl. 171.

Small; wing rather long, fourth quill longest; tail short. ADULT. Head and upper portion of breast and entire superior parts dark chocolate brown; front and eyebrows white; throat, and a line on each side running downwards from the base of the under mandible, white; radiating feathers behind the eye dark brown; primaries dark brown, with small spots of white on their outer edges, and large spots of the same on their inner webs; tail dark brown, narrowly tipped with white, and with two bands of the same; entire under parts of the body, legs and toes reddish ochre-yellow; bill and claws dark; iris yellow.

DIMENSIONS. Total length, about 8 inches; wing, $5\frac{1}{4}$; tail, 3 inches. Female.—Larger.

HAB. Wisconsin (Dr. Hoy); Canada, near Montreal (Dr. Hall); Western?

OBS. Within the limits of the United States, this handsome little Owl has, as yet, only been observed by Dr. Hoy, whose specimens were obtained at Racine, Wisconsin. It is alluded to as *Strix acadica*, and accurately described by Dr. Hall in his MSS. "Sketch of the Zoology of the district of Montreal," though represented as of rare occurrence. It is probably a northern and northwestern species.

In the paper cited above, Prof. Lichtenstein regards this bird as the adult *Nyctale acadica*, and this appears to be the opinion also of the Prince of Canino (Cons. Av., p. 54). It is about the size of *N. acadica*, but of the numerous specimens of that species which have come under our notice, not one has presented intermediate characters, or has otherwise excited a suspicion that the two species were identical. We at present consider them as distinct species.

We have no doubt that this bird is the *Strix albifrons*, Shaw, a species which has been lost sight of for upwards of fifty years; but for the gratification of students who may not have access to the necessary books, we append the original descriptions:—

"Ferruginous brown Owl, paler beneath, with the forehead white, and the remiges barred with black and white.

"The very curious and diminutive species of Owl here represented in its natural size, has perhaps never been either figured or described. It is a native of North America, and particularly of Canada. The supposed female is destitute of the white forehead, which

forms so conspicuous a character in the male. It belongs to the division of smooth or hornless Owls."—Shaw's Naturalist's Miscellany, V. text, not paged, accompanying pl. 171. (1794.)

The same species, and probably the same specimen, is described by Latham, in General Synopsis of Birds, Supplement II. p. 58 (1801).

"White-fronted Owl, *Nat. Mis.*, pl. 171. Size of the *Little Owl*. Length eight inches; general color of the plumage on the upper parts brown; the circle of the feathers round the eyes dark, fringed at the back part with white; between the eyes and over the bill and the chin white; the under parts from thence yellow buff; across the breast a pale brown band; on the wing-coverts a spot or two of white; the first five quills marked with a white spot on the outer, and the second quills with the same on the inner margins; the first quills serrated on the outer edge the whole length; the second quill the same, half way from the tip; tail marked as the quills; legs feathered; bill black; toes dusky.

"This was brought from Quebec, by General Davies, in 1790, and with it another much smaller, which he had in his possession alive; it differed in being more dusky, and the circles of the face not fringed on the back part; otherwise so like, as to be supposed merely differing in age or sex. The General observed to me that this bird frequently erected two feathers over the eye; but although I inspected the specimens very narrowly, I could not observe any feathers longer than the rest; which circumstance is also noticed in respect to the *Short-eared Owl*." (Latham, as above.)

IV. SUB-FAMILY ATHENINÆ. THE BIRD OWLS.

Size small; facial disc nearly or quite obsolete; tarsi generally partially or but thinly clothed with feathers; head without ear-tufts. A numerous group of species, which are generally small and not so nocturnal as those of the preceding sub-families.

I. GENUS ATHENE. BOIE, *Isis*, 1822, p. 549.

Size small; head moderate, without ear-tufts; wings long, with the third and fourth quills usually longest; tail moderate; facial disc, nearly obsolete; bill short; upper mandible curved from the base, nearly concealed by projecting feathers; tarsi long, thinly covered with feathers; toes naked or with a few hair-like feathers. A genus containing about forty species of small Owls of all quarters of the globe.

1. ATHENE HYPUGÆA. (Bonap.) The Burrowing Owl.

STRIX HYPUGÆA. Bonap., *Am. Orn.*, I. p. 72. (1825.)

ATHENE SOCIALIS. Gambol, *Proc. Acad., Philada.*, III. p. 47. (1846.)

Bonap., *Am. Orn.*, I. pl. 7, fig. 2. Aud., *B. of Am.*, pl. 432, fig. 1. Oct. ed., pl. 31?

Small; head moderate; tarsi long; slender, thinly covered in front only with hair-like feathers; naked and scaled laterally and behind; toes with a few scattered hairs; claws curved, rather slender. ADULT. Entire upper parts light yellowish-brown, every feather more or less spotted with white, and on the neck behind, and back, with large partially concealed spots of white; throat white, a narrow band of mottled brown and white on the neck before, succeeded by a large patch of white; other under parts white, with wide transverse bands of reddish-brown, varying in shade in different specimens; legs and under tail-coverts white; quills light brown, with yellowish-white spots on their outer edges, and reddish-white bands on their inner webs; tail pale brown, with about six

irregular bands of yellowish-white; face yellowish-white; bill light yellow and horn-color; irides yellow. YOUNG. Entire plumage much darker than the adult, and with transverse narrow bands and lines of dark brown.

DIMENSIONS. *Male*.—Total length, 9 to 10 inches; wing, 7; tail, 4 inches. *Female*.—Larger.

HAB. Western North America. Oregon (Dr. Townsend); Nebraska (Dr. Suckley); Arkansas, Texas, New Mexico (Col. McCall); Great Salt Lake (Capt. Stansbury); California (Dr. Heermann); Mexico (Lieut. Couch). Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This curious Owl is very abundant in some localities in Western America, where it lives in communities in burrows in the ground. It is nearly related to several South American species, especially to *Athene cunicularia*, which is a native of the western countries of that portion of this continent.

We have doubts that fig. 1 of Mr. Audubon's plate 432 represents this bird, but think it probable that it represents one of the South American species, which fig. 2 of the same plate clearly does. Dr. Townsend's collection, specimens from which were figured by Mr. Audubon, contained birds of Chili and Peru, as well as of North America, from which circumstance the error may have occurred.

II. GENUS GLAUCIDIUM. BOIE, Isis, 1826, p. 970.

Size small; head moderate, without ear-tufts; wings moderate, fourth quill usually longest; tail rather long; tarsi fully feathered; facial disc obsolete; bill short, strong, rather wide at base; claws long, curved, very sharp. This genus contains a few species, amongst which are the smallest birds of this family.

1. GLAUCIDIUM INFUSCATUM. (Temm.) The pigmy Owl.

STRIX INFUSCATA. Temm., Man. d'Orn., I. p. 97. (1820.)

GLAUCIDIUM GNOMA. Wagler, Isis, XXV. p. 275. (1832.)

"STRIX PASSERINOIDES. Temm." Aud., Orn. Biog., V. p. 271; Oct. ed., I. p. 117.

Aud., B. of Am., pl. 432, fig. 4, 5; Oct. ed., I. pl. 30.

Very small, the smallest Owl yet discovered in North America; head moderate; outer three quills sinuated on their inner edges, fourth quill longest; tail rather long; tarsi densely feathered; toes partially covered with long hairs. ADULT. Entire upper parts brownish-olive, on the head with numerous circular spots of dull white; a partially concealed white band around the neck behind, succeeded by another of black; scapulars and superior coverts of the wings with white spots; throat white; a narrow band of mottled brownish-olive across the neck before; other under parts white, with longitudinal stripes of dark olive-brown on the flanks and abdomen; quills dark brown, with small spots of white on their outer edges, and large circular spots of the same on their inner webs; tail dark brown, with five or six pairs of circular or oval spots of white on every feather, larger on the inner webs; bill light yellowish; irides yellow.

DIMENSIONS. Total length, 6½ to 7 inches; wing, 2¾; tail, 3 inches.

HAB. Oregon (Dr. Townsend); California (Mr. Bell, Dr. Heermann.)

Obs. This minute species of Owl is exclusively Western, having as yet only been noticed in California. It much resembles the European *Glaucidium passerinum*, and is about the same size. The most readily detected differences are the nearly naked toes of the present bird, and the absence of the decided reddish tinge which prevails in the color of the European species. It also resembles *G. passerinoides* of South America, but differs also from that species in color and other particulars.

This is the least of the species of Owls inhabiting North America, and has never been observed east of the Rocky Mountains. It lives on insects.

V. SUB-FAMILY NYCTEININÆ. THE DAY OWLS.

Head moderate, without ear-tufts; wings rather long, wide; tail rather long, ample; tarsi strong, and with the toes densely covered with hair-like feathers; claws strong, sharp; plumage very thick and compact. This sub-family includes only the two species now about to be described, both of which are common to the Arctic regions of America, Europe, and Asia, migrating southward in the winter. They are the least nocturnal of all the birds of this family.

I. GENUS NYCTEA. STEPHENS, Cont. of Shaw's Gen. Zool., XIII. p. 62. (1826.)

Size large; head large, without ear-tufts; no facial disc; bill short, very strong, nearly concealed by projecting feathers; wings long, wide, third quill longest; tail moderate or rather long, broad; legs short, and with the toes densely covered with feathers, almost concealing the claws, which are long, curved, and strong; general form compact and robust, and thickly feathered. This genus contains only the species described below.

NYCTEA NIVEA. (Daudin.) The Snowy Owl. The White Owl.

STRIX NIVEA. Daudin, Traite d'Orn., II. p. 190. (1800.)

STRIX NYCTEA. Linn., Syst. Nat., I. p. 132. (1766.)

STRIX CANDIDA. Lath., Ind. Orn., Supp., p. 14 (1801.)

STRIX ERMINEA. Shaw, Gen. Zool., VII. p. 251. (1809.)

STRIX ARCTICA. Bartram, Trav., p. 289 (1791, but not of Sparrman, 1789.)

Large; eyes large; bill nearly concealed by projecting feathers; tarsi and toes densely covered with hair-like feathers, nearly concealing the claws. ADULT. Entire plumage white, in some specimens with a few spots only on the upper parts of dark brown, and on the under parts with a few irregular transverse bars of the same; quills and tail with a few spots or traces of bands of dark brown. In other specimens every feather except on the face and neck before, is distinctly banded transversely with brown, and in some specimens that color predominates on the upper parts; quills and tail with regular transverse bands of dark brown; plumage of the legs and feet pure white; bill and claws dark horn-color; irides yellow.

DIMENSIONS. Female.—Total length, 24 to 26 inches; wing, 17; tail, 10 inches. Male, smaller

HAB. Northern North America. Northern Europe and Asia. Greenland (Prof. Holboll); Hudson's Bay (Mr. Hearne); Canada (Dr. Hall); Vermont (Mr. Thompson); Oregon (Dr. Townsend); Kamschatka (Pallas); Ohio (Prof. Kirtland); South Carolina, Kentucky (Audubon); Bermuda (Sir W. Jardine). Spec. in Mus. Acad., Philada.

OBS. This large and handsome Owl is abundant in the Arctic regions of America, and has been observed at the highest northern latitude yet reached by voyagers. In the winter, it migrates southward over the greater part of Asia, Europe, and North America. It is to be met with every winter in the Northern and Middle States of the Union, though greatly varying in numbers in different years. We have known it to be so abundant in Pennsylvania and New Jersey, as to be brought commonly by the farmers to the market in Philadelphia, and sold for a trifle.

According to Dr. Hall, this fine species breeds in the vicinity of Montreal, making its nest on the ground. Mr. Audubon's plate represents this bird unusually dark.

II. GENUS SURNIA. DUMERIL, *Zoologie Analytique*, p. 34 (1806).

Size medium or small; head moderate, without ear-tufts; facial disc obsolete; bill moderate, strongly curved, with projecting plumes at base; wings long, third quill longest; tail long, graduated, broad; legs short, and with the toes densely feathered. General form rather lengthened, but moderately robust. This genus includes the Hawk Owl of the Arctic regions and two other species of South Africa.

1. SURNIA ULULA. (Linn.) The Hawk Owl. The Day Owl.

STRIX ULULA. Linn., *Syst. Nat. I.*, p. 133. (1766.)

STRIX URALENSIS and *HUDSONIA.* Gm., *Syst. Nat. I.*, p. 295. (1788.)

STRIX DOLIATA. Pallas, *Zool. I.*, p. 316. (1811.)

SURNIA BOREALIS. Less., *Traite d'Orn. I.*, p. 100. (1831.)

"*STRIX FUNEREA.* Linn." Audubon and other authors.

Buff., *Pl. Enl.* 463; Edward's *Birds*, pl. 62; Wilson, *Am. Orn. VI.*, pl. 50, fig. 6; Aud., *B. of Am.*, pl. 378; Oct. ed. I., pl. 27; *Nat. Hist. N. Y. Birds*, pl. 9, fig. 19.

Size medium; first three quills incised on their inner-webs; tail long, with its central feathers about two inches longer than the outer; tarsi and toes thickly feathered. **ADULT.** Entire upper parts fuliginous brown; the head and neck behind with numerous small circular spots of white; scapulars and wing-coverts with numerous partially-concealed large spots of white; face silky grayish-white; throat mixed dark brown and white; a large brown spot on each side of the breast; all the other under parts transversely lined or striped with pale brown; quills and tail brown, with white stripes; bill pale yellowish and horn color; irides yellow; color of upper parts darkest on the head, and the white markings on the head and body varying somewhat in different specimens.

DIMENSIONS. *Female.*—Total length, 16 to 17 inches; wing, 9; tail, 7 inches. *Male* smaller.

HAB. Northern regions of both continents. Montreal (Dr. Hall); Maine, Massachusetts (Dr. Brewer); Wisconsin (Dr. Hoy); Northern Ohio (Prof. Kirtland); Vermont (Mr. Z. Thompson); Hudson's Bay (Dr. Richardson); New Jersey (Mr. Harris). Spec. in Mus. Acad., Philada.

OBS. This remarkable species, which partakes of the characters of both an Owl and a Hawk, is of very rare occurrence in the Middle States of this Union, though abundant in the northern regions of America, and occasionally met with in the Northern States. It is in a great measure diurnal in its habits, venturing abroad boldly in daylight.

Careful examination of numerous American and European specimens has not enabled us to detect any differences.

This bird was undoubtedly meant by Linnæus in his description of *Strix ulula*. The name applied to it by various authors, *Strix funerea*, is properly applicable to the European species, to which Gmelin gave the name *Strix Tengmalmi*.

The descriptions now given embrace all the species of Owls the existence of which in America north of Mexico is satisfactorily demonstrated; though in the succeeding pages various others will be enumerated as obscure or little known.

All the species enumerated in the preceding synopsis, except *Nyctale albigrons*, are known to be of common occurrence in some part of that portion of this continent included in our limits; and specimens of a majority of them can be obtained generally in the course of a single winter in the markets of either of the larger cities, being brought for sale from the country, as is the case with the Falcons, and also all the larger and most common wading and swimming birds. The study of the habits of Owls is, however, attended with peculiar difficulties, on account of their nocturnal habits; and it is not therefore remarkable that questions respecting common species are yet to be regarded as unsettled. The identity, for instance, of *Scops asio* and *Scops naevia*, is by no means universally admitted; nor, if identical, is the change in the colors of their plumage sufficiently well understood. Gentlemen well acquainted with American ornithology, and in whose opinions we have the highest confidence (as, for instance, Thomas B. Wilson, M. D., and Samuel W. Woodhouse, M. D., of Philadelphia), are strongly disposed to doubt that they are identical.

Specimens of Owls to be met with in North American collections are very generally in winter plumage; and the procuring of several of the species in the spring or during the summer, is comparatively of unusual occurrence. The fully ascertaining of the seasonal changes in any species is yet desirable, even if only confirming previously known facts, or the statements of authors. It is possible that *Nyctale albigrons* is the adult of *Nyctale acadica*. This we give as an example illustrative of the importance of further observations, and may be allowed to add that, of several American species nearly related to others of Europe and Asia, the comparison of specimens of similar ages and in similar seasonal plumage, is only satisfactory and reliable.

In Western North America, it is exceedingly probable that species of this family exist which are yet unknown to naturalists. In Texas, species known as inhabitants of Mexico may yet be detected.

All the Owls found in the northern portion of the United States, are in some measure migratory, and some species appear to travel in large bands, scattered over a considerable extent of country. The Snowy Owl is sometimes abundant for a few days, and then will suddenly disappear from a district, perhaps soon to appear again. The Marsh Owl appears along the river Delaware occasionally in considerable numbers, and staying but a short time, or leaving apparently only a few stragglers. We once saw what was very nearly a flock of this species, on a shooting excursion in "the Neck," as it is called, or the point of land below Philadelphia, formed by the junction of the Delaware and Schuylkill rivers, the larger portion of which is wholly devoted to the cultivation of culinary vegetables for the market of the city. On getting over the fence into a small field, in which a crop of cabbages had been raised, the smaller *heads* of many of which remained, we were surprised to see a large number of stalks ornamentally surmounted by Owls. They soon, however, dispersed in all directions.

The Barn Owl (*Strix pratineola*), as well as the Marsh Owl (*Otus brachyotus*), we have known to occur in open fields, where but little concealment was possible.

The Red or Mottled Owl is very persistent in its locality, and the same pair probably returns to the woods that it has previously occupied in preceding seasons, in some measure disregarding encroachments on its extent. In a small tract of timbered land at Powelton, the hospitable residence of John Hare Powel, Esq., surrounded by villages constituting a portion of the suburbs of Philadelphia, a pair of this species continued to appear and to raise broods of young until within a period of only two or three years past, notwithstanding constantly occurring chances of molestation.

An interesting fact relating to the species just mentioned (*Scops asio*), has recently been communicated to us by our esteemed friend, Mr. William Kite, of Chester county, Pennsylvania, a careful observer, much attached to the pursuit of natural history. He made the singular discovery that in this species the early ceremonies in the association of a pair about to assume the duties of incubation were for the greater part performed on the ground, and were accompanied invariably by unusual and continued cries, thus illustrating in a striking manner the strong analogy of these birds to the cat-like quadrupeds. This remarkable circumstance we regard as new in the history of this family of birds, and the observation of other species would be in a high degree interesting.

Further investigations and collections in this family are particularly desirable in the western and northwestern regions of North America, and will very probably result in the discovery of species not now known to naturalists.

B.

DOUBTFUL and obscure species which have been described as inhabiting America north of Mexico:—

1. *STRIX WAPACUTHU*. Gm., Syst. Nat. I., p. 291. (1788.) Pennant, Arctic Zoology I., p. 268. Rich. and Sw. Fauna Boreali Americana, Birds, p. 86, 99.

"The Spotted Owl (*Wapacuthu*) weighs five pounds, and is two feet long and four broad; the irides bright yellow; bill and talons shining black, and much curved, the former covered with bristly hairs projecting from the base; space between the eyes, the cheeks, and throat, white; on the top of the head, and on each side of the concha, the extreme parts of the feathers are dusky black; concha dirty white; scapularies, with the lesser and greater coverts of the wings, white, elegantly barred with reddish dusky spots pointing downwards; the quill feathers and tail are irregularly barred and spotted with pale red and black; back and coverts of the tail white, with a few dusky spots; under coverts and vent feathers white; the breast and belly dusky white, crossed with an infinite number of narrow reddish bars; the legs are feathered to the toes; the latter covered with hairs like those of the bill, but not so strong.

"This bird is an inhabitant of the woods, makes a nest in the moss on dry ground, lays from *five to ten* white eggs in May, and the young fly in June, and are entirely white for some time after. They feed on mice and small birds, which they generally kill themselves. Hutchins' MSS., p. 99." Fauna. Bor. Am., Birds, p. 99.

This species, if distinct from the Snowy Owl, is absolutely unknown to naturalists, never having been noticed by any traveller since Mr. Hutchins. Though, from the description above quoted, apparently a peculiar species, the same name is given by the natives in the vicinity of Hudson's Bay, to the Snowy Owl, according to Mr. Hearne (Journey to the Northern Ocean, p. 402. London, 1795, quarto); and it, too, makes its nest on the ground. With so little positive information, it is impossible to form more than conjectures respecting the bird alluded to in the description, and it must be left as an interesting matter of inquiry for future explorers and naturalists.

It may be observed with reference to Mr. Hearne's statement, that if the bird he alluded to was really an Owl, it differs from any other American species in laying from "five to ten eggs." Careful and evidently accurate statements respecting the incubation of nearly all the northern species, are given by Dr. Hall, in his "Sketch of the Zoology of the District of Montreal" (manuscript in our possession); and no species is represented as producing more than "four to five eggs," except the Mottled Owl (*Scops nœvia*), which lays "five to six." The Snowy Owl, it is stated by Dr. Hall, lays "two white eggs."

2. OTUS MEXICANUS. (Gm.)

STRIX MEXICANA. Gmelin, Syst. Nat. I., p. 288. (1766.)

BUBO CLAMATOR. Vieill., Ois d'Am., Sept. I., p. 52, pl. 20. (1807.)

STRIX LONGIROSTRIS. Spix Av. Bras. I., p. 20, pl. 9 a. (1824.)

This Owl, which is a rather common South American species, is stated by Vieillot to inhabit America from Cayenne to Hudson's Bay. His remarks apply, however, to the *Scops asio* in mottled plumage; though a good plate is given by him of the bird, of which the name is above cited, no specimen of which has ever come under our notice, captured in any part of the United States.

3. STRIX GEORGICA. Lath., Gen. Syn. Supp., p. 15. (1801.)

"Size of the Barn Owl; length sixteen inches and a half: bill yellow; the plumage on the upper parts of the bird is brown, banded with yellowish; throat and breast pale brown, crossed with whitish bands; belly yellowish white, marked with longish red brown streaks; thighs and legs woolly, whitish or very pale in color, varied with small blackish spots; quills and tail feathers brown, crossed with four or five white bands.

"I met with this specimen in the collection of Mr. Humphries, said to have come from several miles within South Georgia, in America." (Latham, General Synopsis of Birds, Supplement II., p. 64.)

This bird is placed by Latham, in his division of Owls, "with smooth heads," and probably refers to the Short-eared Owl (*Otus brachyotus*). The description is not, however, entirely applicable. This name may, however, be entitled to precedence as the proper name of that species in the genus *Brachyotus*; and, as an aspirant to such honors, we recommend it to the favorable notice of enterprising ornithologists; and also, while our hand is in, respectfully suggest that as a name for the allied European species, *arctica*, Sparrmann, which dates 1789 (Mus. Carls., pl. 51), might do as well as *palustris*, and have the advantage of more mature age.

4. STRIX FORFICATA. Aud., Orn. Biog. V., p. 334. (1839.)

"I shot this bird in the vicinity of Green Bay, when on my way across to the Mississippi; but the drawing which I made of it on the spot has been lost. It was about the size of *Strix acadica*, of a dark grey color, with the tail long and deeply forked; but I am unable to describe it more particularly, the Journal in which it was noticed having been, along with others, destroyed by the great fire which happened in New York some years ago." (Audubon, as above.)

The bird here alluded to has never again been observed so far as we have learned. The description probably applies to an unknown species, and certainly to one not known as an inhabitant of the United States.

5. "STRIX PASSERINA. Gmel." Aud., Orn. Biog. V., p. 269. (1839.)

Aud., B. of Am., pl. 432, fig. 3; Oct. ed. I., pl. 29.

"Bill greyish, its ridge and tip greyish yellow; iris dark; claws brownish black, lighter at the base; the general color of the upper parts is chocolate brown; the feathers

of the head have an oblong white median mark, and, as they are small, this part is marked with numerous spots; on the hind neck the white spots are very large, forming a conspicuous patch; on the back most of the feathers have a single large subterminal roundish spot, which is also the case with the scapulars and wing coverts, some of which, however, have two or more spots; all the quills have marginal reddish-white spots on both webs, the third quill with six on the outer and four on the inner, with two very faint pale bars toward the end; the tail is similarly marked with four bands of transversely-oblong reddish-white spots; on the anterior part of the disc, the feathers are whitish, with black shafts, on the lower part whitish, on the hind part brown, tipped with greyish-white; a broad band of white crosses the throat and curves upward on either side to the ear; there is also a patch of white on the lower part of the fore-neck, and between them is a brownish-grey band; the general colour of the lower parts is dull yellowish-white, each feather with a broad longitudinal band of chocolate-brown; the abdomen and lower tail coverts unspotted; the tarsal feathers dull white."

DIMENSIONS. Length, to end of tail, $10\frac{1}{2}$ inches; to end of wings, 10; wing, from flexure, $6\frac{1}{4}$; tail, $3\frac{1}{2}$; tarsus, $1\frac{1}{4}$ inches. (Aud., as above.)

The bird here described is stated by Mr. Audubon to have been procured near Pictou, Nova Scotia; and he appears to have been confident that it was identical with the European *Strix passerina*. It is, however, clearly not that species. We would suppose it to be the young of *Nyctale richardsoni*, were it not described as having the "iris dark." It may be a small and curious new species of *Syrnium*, or perhaps *Nyctale*, and the procuring of specimens would be in a high degree interesting. We have no knowledge of it ever having been observed since the publication of the above description by Mr. Audubon.

6. SYRNIUM ALUCO. (Linn.)

STRIX ALUCO. Linn., Syst. Nat. I., p. 132. (1766.)

STRIX STRIDULA. Linn., Syst. Nat. I., p. 133. (1766.)

œlby, Brit. Orn., pl. 25; Gould, B. of Eur. I., pl. 47.

This well known European species is given by Mr. Nuttall, in his "Manual of the Ornithology of the United States and Canada" (I., p. 135), and is stated by him to have been found in the northern regions of this continent. Such is probably the case; but no American specimen has ever come under our notice.

This species exhibits very nearly the same variety of plumage as the American Red and Mottled Owls (*Scops asio* and *nævia*), and has been described repeatedly under different names.

7. STRIX PEREGRINATOR. The Sharp-winged Owl. Bartram, Travels, p. 285. (1793.)

With the head eared and the body variegated in color.

Impossible to determine from the brief description, though being given as a species inhabiting Pennsylvania, probably applicable to the Long-eared Owl (*Otus Wilsonianus*).

8. *STRIX DIURNALIS*. The Short-winged Day Owl. Barton, Fragments of the Nat. Hist. of Penna., p. 9. (1799.)

Stated by Professor Barton to have been observed by him in Pennsylvania on the 15th of December, 1791, but of the species he gives no description.

The names and descriptions now given comprise all that have come under our notice, represented as inhabiting North America within our limits.

Of the birds of this family, the names proposed by the older American naturalists and others, are not numerous; and though the group may be regarded as presenting some difficulties to the student, the correct nomenclature of North American species is not difficult to determine. Bartram enumerated six species (Travels, p. 285), to all of which, except one, he gives names for the first time employed to designate the birds to which he alludes, and to a few of which he attaches sufficient descriptions. All of his species had, however, been previously described, and we have, we believe, cited his names as synonyms, so far as they can be ascertained.

The greatest difficulty in the study of the Owls of North America will be found in the intimate resemblance that a few species bear to others of Europe and Asia, and, we may add, in the examination of the birds which we have given in the preceding pages as varieties of the Great-horned Owl (*Bubo virginianus*). The variations that we have noticed, and especially those of color, may be ascertained by subsequent observation to be so uniform and constant as to constitute specific distinction, though at present we cannot so regard them.

In the Owls of other countries there are several groups in which it is very difficult to determine the species, on account of their resemblance to each other. This is especially the case with the small species of the genus *Scops*, which inhabit India and other countries of Asia; and there are, too, many of the birds of this genus, of all countries, that are exceedingly perplexing. In fact, we would hardly recommend a student in natural history to begin General Ornithology with the Owls.

With this family we conclude the rapacious Birds.

BUTEO INSIGNATUS.—(CASSIN.)

THE BROWN BUZZARD.

PLATE XXXI.—ADULT MALE AND YOUNG FEMALE.

ONE of the most remarkable facts in the geographical distribution of the birds of western and northwestern North America is, that many species extend their range in northern latitudes almost or quite to the shores of the Atlantic ocean, while not a single instance is on record of the same species having been observed in either of the middle or southern States of the Union. The Magpie, which on the Pacific is commonly found southwardly as far as Mexico, has been noticed by Dr. Hoy, at Racine, in the State of Wisconsin. The Lark Bunting (*Emberiza grammaca*), another western bird, has also been ascertained by the same gentleman to be abundant in the State just mentioned; and the only specimen that we have ever seen of the Stone Chat of America (*Saxicola ænanthoides*), a bird discovered some years since on the coast of Oregon, was obtained in the vicinity of Halifax, Nova Scotia.

Many instances tending to demonstrate this extensive and remarkable migration might be produced, but we have unfortunately to acknowledge ourselves unable to offer a theory or even hypothesis attempting to account for it, and must regard the facts as remaining among many in natural history with which naturalists are for the present under the necessity of resting, without inference or application to any established general principles. Important results will yet reward American naturalists who may engage in this interesting field of scientific research.

Instinct is little or nothing more than inherited memory. But we are by no means satisfied that any definition which we have yet met with of the faculty known by the latter name is strictly correct. Whatever memory is, that inherited we are disposed to regard as instinct. And that the impressions on this faculty are transmissible in animals from parents to their offspring, we regard the migration of young birds, particularly those of a first brood, when the parents remain to attend to a second, as clearly substantiating.

The bird now before the reader is a species that appears to perform the extended northward migration to which we have alluded, and is one of the most remarkable instances that has come to our knowledge. It was first described by us from a specimen obtained in the vicinity of Montreal, Canada, and the only instance of its having been observed since, has been by Dr. Heermann, in California; though if ever occurring in the middle or southern States on the Atlantic, in the same latitude as on the Pacific, it has escaped the researches of all previous naturalists or travellers.



The Sparrowhawk

Buteo insignatus Cassini

Adult and young birds of this species were observed, and specimens were obtained by Dr. Heermann, who ascertained that it reared its young in California.

For an opportunity to examine the specimen originally described by us in the present volume (p. 102), we are indebted to our lamented friend and correspondent, M. McCulloch, M. D., a naturalist of extensive acquirements, and an eminent physician, late of Montreal, but, we much regret to add, now recently deceased, and to John Pangman, Esq., of Grace Hall, in the vicinity of that city. Mr. Pangman had the kindness to interest himself, in conjunction with Dr. McCulloch, so much as to obtain the loan of the specimen from the Natural History Society of Montreal, in the museum of which it was deposited, and to bring it for our inspection to Philadelphia, and we shall not soon forget his evident and enlightened gratification, nor our own great pleasure, when we assured him that it was a bird hitherto unknown as an inhabitant of North America, and, as we then supposed, very probably an undescribed species, which we subsequently ascertained to be the case.

This is one of the most remarkable of the rapacious birds which have been recently added to the ornithological fauna of the United States. It differs entirely in color from any previously-known American species, unless it may be supposed to approximate in that character to the little-known Harlan's Buzzard of Audubon. It bears also some distant resemblance to one stage of plumage of the Black Hawk.

The only information relative to the habits of this bird that we have in our power at present to lay before the reader, is the following from the Journal of Dr. Heermann:

"I first remarked this species at the crossing of Graysonville ferry, on the San Joaquin river, California, and continued to meet with it occasionally until we had crossed Kern river. Owing to the lateness of the season, I was able to ascertain but little respecting its propagation; the only nests which were found having been forsaken some time previously by the young. These nests, composed externally of coarse sticks, and lined with roots, were built in the topmost branches of oaks, which grow abundantly on the banks of the large water-courses.

"This bird, like the rest of its genus, appears sluggish in its habits, perching for hours in a quiescent state on some tall tree, and permitting the hunter to approach without showing any signs of fear. This apparent stolidity may, however, be owing to the fact that it is seldom molested, and has not yet learned to mistrust a gun, as do the birds of prey in more settled portions of the country."

The specimens brought by Dr. Heermann are now in the national collection at Washington city.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS BUTEO. Cuvier, Regne Animal, I., p. 323. (1817.)

BUTEO INSIGNATUS. Cassin, Birds of California and Texas, I., p. 102. (1854.)

FORM. Short and robust; wing long; third quill longest, secondaries emarginate at their tips; quills wide; tail moderate or rather short, somewhat rounded; under coverts of the tail long; tarsi rather short, feathered in front below the joints, with the tibiae naked behind, and having in front about ten transverse scales; claws rather long, moderately curved; bill short; upper mandible slightly festooned.

DIMENSIONS. *Adult male*.—Total length of skin, 17 inches; wing, $14\frac{1}{2}$; tail, $7\frac{1}{2}$ inches.

COLORS. Under coverts of the wing and tail white, the former striped longitudinally with pale ferruginous, each feather having a central dark line, and the latter transversely with reddish-brown; edges of wings at the shoulders nearly pure white; plumage of the tibiae rufous, mixed with brown; throat and a few feathers of the forehead white, each feather having a line of dark brown, nearly black; entire other plumage above and below dark brown, nearly every feather having a darker or nearly black central line; quills above brown, with a slight purple lustre, beneath pale cinerous, with their shafts white, and with irregular and indistinct transverse bands of white; tail above dark brown, with an ashy or hoary tinge, and having about ten transverse bands of a darker shade of the same color; beneath nearly white, with conspicuous transverse bands of brown, the widest of which is subterminal; tip paler; bill dark; cere, tarsi, and feet yellow. *Adult male*.

YOUNG. Entire upper plumage dark brown; on the back of the head and neck white at base, and edged with reddish; scapulars and greater coverts of the wing with large partially-concealed rufous spots; under parts reddish-white, every feather with a large terminal oblong spot of dark brown, and on the abdomen and tibiae with numerous transverse bands of the same color; under tail coverts very pale reddish-white, with a few transverse spots and lines; inferior coverts of the wing pale reddish-white, with large brown spots.

HAB. Canada and California. Spec. in Nat. Mus., Washington city.

US. There is no other North American Buzzard with which there is any probability of the present bird being confounded by the student, on account of the peculiarity of its colors. In this character it bears a resemblance to some stages of plumage of *Circus hudsonius*, or to the European *Circus aeruginosus*. It also is somewhat similar in colors, especially those of the young bird, to *Buteo pennsylvanicus*, but is much larger, and readily distinguished.



The Black-breasted Woodpecker

Melanerpes thyroideus Cass.

MELANERPES THYROIDEUS. — (CASSIN.)

THE BLACK-BREASTED WOODPECKER.

PLATE XXXII.—MALE.

THE species of Woodpeckers are more abundant in the regions on the Pacific Ocean or west of the Rocky mountains than in any other part of North America. Several of them inhabiting those countries are, too, amongst the handsomest birds of this family, as, for instance, Lewis's Woodpecker (*Melanerpes torquatus*), a species now brought in almost every collection from California; the Red-breasted Woodpecker (*Melanerpes ruber*), a beautiful little species, with the head, neck and breast brilliant carmine; the Californian Woodpecker (*Melanerpes formicivorus*), figured in plate 2 of the present volume; and various others, attractive on account of either the beauty or the singularity of their colors.

The extensive and but partially-explored forests of Northern California and Oregon are peculiarly well adapted to the habits of this group of birds. This is, however, not solely the reason that they are found there; but there are principles involved which are at present beyond the deepest reasoning of zoologists, and are as yet subjects of theory only. All that we can positively advance is, that of the Woodpeckers of North America, the greatest number of species, and of more handsome plumaged forms, than elsewhere in our portion of the continent, are inhabitants of California and Oregon; and that whatever causes have tended to the development of this family of birds, they have been more efficient in the regions alluded to, than elsewhere in North America.

Philosophic zoology is yet in its infancy. Extreme conservatism in science fondly rests satisfied with present knowledge, and visionary speculators raise mountains of opinionative systems and theories, which must be cleared away to allow real progress. Between the two classes of operators, the true man of science may have a difficult time of it. Of sawing the air there is abundance, but much as elsewhere very little is done in zoology with due emphasis and discretion.

In addition to the species alluded to above, there is found in the forests of Oregon and the Rocky Mountains, the largest of all the Woodpeckers, a magnificent species related to the Ivory-billed Woodpecker of the Southern States, but much larger, and which has up to this period escaped the observation of any American naturalist, except Dr. Townsend, who saw it, but did not procure specimens. It is the *Dryocopus imperialis*, first described by Mr. Gould, a distinguished English ornithologist. This fine bird will be figured in a subsequent part of the present volume.

The bird now before the reader was discovered in California by Mr. John G. Bell, of New York, deservedly well known as a naturalist, and beyond comparison the most skilful preparer of birds and quadrupeds and general taxidermist in the United States. Mr. Bell was the first naturalist who visited California after it became a portion of the United States; and during his stay in that country, made a large and highly interesting collection, in which was the present and other new species. He observes in his notes now before us, that he found this bird in one locality only, and observed but two specimens, both of which he obtained.

Subsequently this Woodpecker has been found in California by Dr. Heermann, and in New Mexico by Dr. Henry; but is stated by both to be of rare occurrence. The former of these gentlemen observes:—

“I procured this bird three years since in the southern mines of California, where it frequents more especially the pine trees. I never saw it alight on the oaks, although abundant in that locality. It is one of the most rare of the Woodpeckers of that country.”

Dr. Henry states: “Of this bird I know nothing farther than that I procured a single specimen in the mountains near Fort Webster, in the winter of 1852–3. I shot it from near the summit of a tall pine tree, and was not aware until I obtained it, that it was different from any other species that I had ever seen. My efforts to find it again have been unremitting, but without success; and I regard it as a rare bird in this district. The specimen in my collection is an adult male.”

The figure in our plate is two-thirds of the size of life.

The plant represented is *Habrothamnus fasciculatus*, a native of Mexico.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS MELANERPES. Swainson, Fauna Boreali Americana, Birds, p. 316.

MELANERPES THYROIDEUS. (Cassin), Proc. Acad. Philada., V., p. 349. (1851.)

FORM. Short and compact; bill moderate, strong; upper mandible with the ridge (or culmen) very distinct, and short ridges over the apertures of the nostrils; wing rather long; third primary longest; tail moderate, graduated, with all its feathers somewhat rigid; two middle feathers longest.

DIMENSIONS. Total length of skin, about $8\frac{3}{4}$ inches; wing, $5\frac{1}{4}$; tail, $3\frac{3}{4}$ inches.

COLORS. *Male*.—Breast with a large semi-circular patch or transverse belt of black; middle of the abdomen yellow; head above and throat pale brown, with obscure longitudinal lines and spots of black; back, wing coverts, sides of the body, and inferior coverts of the tail, transversely striped with white and black, the former tinged with obscure yellowish; rump and superior coverts of the tail white; a few feathers of the coverts with irregular bars of black on their outer webs; quills black, with spots of white on both

edges; tail black, with irregular spots of white; bill and tarsi dark. *Female*.—Similar to the male, but with the colors more obscure, and the black of the breast of less extent and not so deep in shade.

HAB. California and New Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. Somewhat resembles in form only the Red Woodpecker of western North America (*Melanerpes ruber*), but is larger and differently colored. It also in some respects resembles the yellow-bellied Woodpecker (*Picus varius*), but not so much as to render it necessary for differences to be specially designated. It is possible that this species, when perfectly mature, or in spring plumage, may assume more brilliant colors, as do others of its genus.

We regard this bird as singularly blending the characters of genera which in typical species are very distinct and easily defined. It is of the general form of *Melanerpes*, though not strictly; while in some other respects, especially in colors, it shows an alliance to that group of typical *Picus*, which includes *Picus varius*, and several other American species. Our present arrangement or generic designation is provisional only.

CARDINALIS SINUATUS. — BONAPARTE.

THE TEXAN CARDINAL BIRD.

PLATE XXXIII. MALE AND FEMALE.

IN our present plate we present to the reader one of the most delicately colored of the many fine-plumaged birds which inhabit the southwestern countries of this Republic, and it is another of the birds of Mexico whose range of locality northwardly extends to within the limits of the United States. Our bird is, however, resident in Texas, or of but limited migration during the coldest season. It has occasionally been observed in considerable numbers; but is as yet to be met with in comparatively few collections, and is much valued by collectors.

Though not very closely resembling the beautiful Cardinal bird of the Northern States (*Cardinalis virginianus*), its general form, particularly its lengthened and handsome crest and long tail, are strictly similar, and its habits are of the same general character. The bill, however, in the present species will be found to be singularly different from that of any other bird of this genus.

The group of birds to which that now before us belongs, is composed of four or five species remarkable for their graceful forms and very showy colors, all of which inhabit North and Central America. In addition to the attractions of their plumage, these birds possess very considerable powers of voice, though by no means entitled to be ranked as songsters. The Cardinal bird, known also by the names of Virginia Nightingale and Red Bird, is the only species inhabiting the States north of Texas, and is frequently met with at all seasons in the States on the Atlantic. It inhabits, for the greater part, low and damp woods, in which there is a profuse undergrowth of bushes; and is particularly partial to the vicinity of water-courses. The male, on account of the splendid vermilion of his plumage, always attracts attention; and though rather shy and careful in exposing himself, is frequently shot by gunners for no other purpose than the possession of such a handsome bird.

The colors of our northern Cardinal bird are vermilion, with the throat black. In Mexico, there is found another beautiful species, singularly resembling in form and color that to which we have just alluded, but wanting the black throat. It differs also in the shape of the bill and some minor characters.

The bird now before the reader was originally described as a bird of Mexico, in the Proceedings of the Zoological Society of London, by Charles Lucian Bonaparte, Prince of Canino, one of the most accomplished zoologists of Europe, and held in deservedly high estimation in this country, on account



The Twin-Cardinal Bird.

Cardinalis sinuatus, Forst.

Described by Wm. L. Hancock.

Illustrated by J. J. Audubon.

of his splendid volumes on American Ornithology. His specimens were obtained near the city of Mexico.

Within the limits of the United States, this species was first observed by Capt. J. P. McCown, of the United States Army, at Ringgold Barracks, in Texas. Since that period, it has been noticed and specimens brought in collections by several of the naturalists, who have accompanied expeditions sent by the government, though never, so far as we have learned, out of the State of Texas.

To Captain McCown we are indebted for the following note respecting this species, for which and many similar favors we beg to tender our acknowledgements.

"This handsome species was occasionally seen on the Rio Grande, having apparently a strong partiality for damp and bushy woods; and in fact so far as I observed never venturing far from the river. I cannot speak positively, but am under the impression that it remains in Texas during the whole year, having seen it so late in the fall, and again so early in the spring, that if not constantly resident, its migration must at any rate be very limited. It is a gay, sprightly bird, generally seen in company with others of the same species, frequently erecting its crest, and calling to its mate or comrades, though rather shy and not easily approached. Its voice and general habits appeared to me as very similar to those of the common species of the Northern States. I never saw its nest, though it undoubtedly breeds in Texas."

During his late connection with Lieut. Williamson's expedition, this bird was noticed by Dr. Heermann, from whose beautiful specimens, through his kindness, our plate has been prepared, and who has allowed us to make the following extract from his Journal:—

"After leaving Teusoa, we observed the first specimen of this bird but little beyond the crossing of the San Pedro river. It was in a dry cañau, perched on a bush, and seemed weary and lost, and was probably a wanderer, as no more were observed until we reached El Paso. At this place, in the vicinity of the habitations of man, we found it quite common, frequenting the hedges and trees, and continued to see it occasionally on our road until we left civilization behind us. Raising its crest erect as it moves actively about in search of food, it emits at intervals a clear, plaintive whistle, varied by a few detached notes. It is said to be quite common on the Rio Grande river and in Mexico."

This species was also found in Texas by Mr. John H. Clark, zoologist, attached to the Mexican boundary surveying party. In Mexico, particularly in the States of Tamaulipas and Nueva Leon, Lieut. Couch observed it in considerable numbers.

Our figures, which are those of the adult male and female, are rather less than two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CARDINALIS. Bonaparte, Comp. List., p. 35. (1838.)

Bill short, very thick at base; culmen advancing on the forehead; wing moderate; fourth and fifth quills longest and nearly equal; tail long, slightly rounded; tarsi rather long; middle toe long, others moderate; general form robust; tail long; and head above with elongated crest-like feathers on all known species. A genus containing five or six species of handsome birds, peculiar to America.

CARDINALIS SINUATUS. Bonaparte, Proc. Zool. Soc., London, p. 111. (1837.)

FORM. About the size or rather larger than *Cardinalis virginianus* of North America; not strictly exhibiting the characters of this genus; bill short; lower mandible much thicker than the upper; gonys ascending abruptly; upper mandible curved; wings short; third, fourth and fifth quills nearly equal and longest; tail long; tarsi moderate; head with a conspicuous crest of lengthened erectile feathers.

DIMENSIONS. Total length of skin, about 8 inches; wing, $3\frac{3}{4}$; tail, $4\frac{1}{2}$ inches.

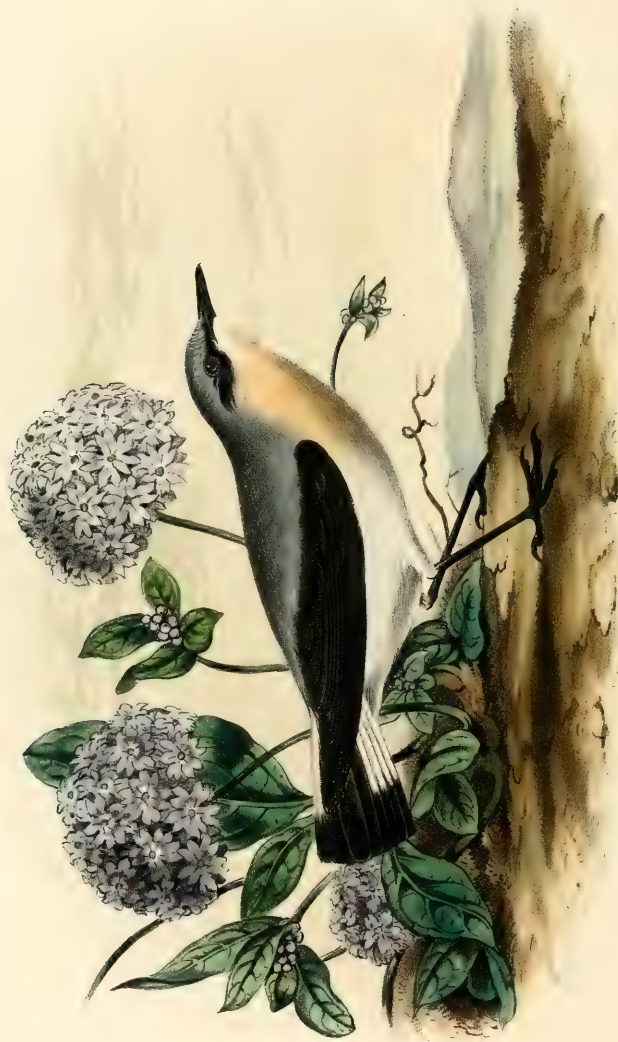
COLORS. *Male*.—Plumage encircling the base of the bill; longer feathers of the crest, wide medial longitudinal band on the under parts, tibiae, and under coverts of the wings, fine crimson; entire upper parts light cinerous, which is the color also of the sides and flanks; quills ashy brown, both webs edged with crimson; tail above and below dark crimson, tinged with brown; abdomen and under tail coverts pale rosy white, the feathers of the latter crimson at their bases; plumage of the breast edged and tipped with pale ashy; bill and tarsi pale yellowish.

Female. Under wing coverts, edges of quills, crest, and tail, pale crimson, the last shaded with brown; entire plumage above cinerous, below yellowish-cinereous; no crimson on the forehead or on the throat or other under parts.

HAB. Texas, Mexico. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington city.

OBS. This beautiful species, though in general form and appearance presenting the characters of *Cardinalis*, is quite different in the form of the bill, and has been placed by the distinguished and accomplished naturalist who first described it (the Prince of Canino) in a subdivision which he names *Pyrrhuloxia* (Conspectus Avium, p. 500).

It appears to be restricted to Mexico and the southern part of Texas, though its northern range may yet be ascertained to extend farther than at present known. It does not resemble any other species sufficiently to lead to confusion.



The American Sparrow

Scaevola grandiflora Vigors

Dr. Shaw's *Illustrations*

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SAXICOLA CENANTHOIDES. — VIGORS.

THE AMERICAN STONE CHAT.

PLATE XXXIV.—ADULT.

THE Stone Chats and Wheat Ears, which are the English names of birds of the genus *Saxicola*, are abundant in the old world, though the greater number of the species appear to be restricted to Africa. The few that are natives of Europe are numerous throughout the greater part of that continent. They are birds of plain but agreeable colors, and inhabit fields and other open grounds or plains covered with shrub-like vegetation, running with facility, and making their nests on the ground, or in holes beneath the surface. These are curiously constructed by some species of this group, and very carefully concealed, though frequently in situations much exposed. There are nearly forty species of this group of birds composing the present and a nearly allied genus.

Though there are so many species of these genera, the bird now before us is the only one that appears to be peculiar to the continent of America. One other, the *Saxicola oenanthe*, a common European bird, is, however, a visiter to this continent. We have seen undoubted specimens from Greenland, and occasionally it strays so far southwardly as New York, in the vicinity of which city a few specimens have been captured, one of which is in the collection of our friend, Mr. George N. Lawrence.

The present bird was originally described in the Zoology of the Voyage of the Blossom, from specimens obtained on the western coast of North America; but apparently the naturalists attached to the party which performed that voyage, had no opportunities of acquiring any information respecting its history or the district that it inhabits. Nor have others been more successful; no American naturalist or traveller having noticed it again in Western America, notwithstanding the researches which have been carried on in that portion of this continent.

The only specimen that we have ever seen of this bird is in the collection of the Academy of Natural Sciences of Philadelphia, to which it was presented by our intimate and valued friend, Thomas M. Brewer, M. D., of the city of Boston, one of the most eminent of American ornithologists, and now particularly devoted to the investigation of the nidification and oology of the birds of this country, the results of which we hope soon to see published. Dr. Brewer obtained the specimen alluded to in Nova Scotia, but could procure no account of it beyond the fact that it was considered as of unusual occurrence in that province.

This bird is very closely allied to the Wheat Ear of Europe (*S. œnanthe*), and is in all probability of very similar habits. In the absence of positive information we can only suppose it to be an inhabitant of the countries north of the limits of the United States, in which there is a vast extent of territory well adapted to the habits of birds of this group. It is also probably not an abundant species, or it would have been noticed more frequently during its winter migration. But of the ornithology of all the northern portion of the United States from the ninetieth degree of longitude to the Pacific Ocean, or west of the Mississippi river, too little is known to justify any conclusions. Many species of Northern and Western America, of which little or nothing was previously known, have within a few years been demonstrated to be abundant, and such may hereafter prove to be the case with the bird which is the subject of our present article.

The figure in our plate is about two-thirds of the size of life.

The plant represented is *Abronia umbellata*, a native of western North America.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS SAXICOLA. Bechstein, Ornithologisches Taschenbuch, p. 216. (1802.)

Bill straight, with the culmen distinct and somewhat ascending into the feathers of the forehead; a few short and weak bristles at the base of the upper mandible, which is rather wide; wing rather long; first quill spurious, third and fourth longest, and nearly equal; tail moderate, wide, truncate; legs long, rather slender. General form adapted to living on the ground.

SAXICOLA CENANTHOIDES. Vigors, Zool. Voy. Blossom, Ornithology, p. 19. (1839.)

FORM. Rather larger than *Saxicola œnanthe*, but very similar to that species in form and general characters and appearance; wing long; second primary longest; tail moderate or rather short; legs, especially the tarsi, long; bill moderate, rather wide at base.

DIMENSIONS. Total length of skin, about $6\frac{1}{2}$ inches; wing, $4\frac{1}{8}$; tail, 3; tarsus, $1\frac{1}{4}$ inches.

COLORS. Narrow line through the eye, enlarging on the ears, black, which is the color also of the wings; forehead ashy white, fading into the cinerous of the head above; back cinerous; upper coverts of the tail white; under parts white, tinged with pale fulvous, darker on the breast; two middle feathers of the tail white at base; terminal two-thirds of their length black; other feathers of the tail white, tipped with black; bill and legs dark.

HAB. Northern America, Nova Scotia, Oregon. Spec. in Mus. Acad., Philadelphia.

OBS. We are not without doubts that the bird now before us is really distinct from *Saxicola œnanthe* of Europe, but having unfortunately a single specimen only, we cannot make an examination or comparison in all respects satisfactory. Our specimen is uniformly larger than either of the numerous specimens of the European species in the collection of the Philadelphia Academy, and is, as an especial character, longer in the tarsi. Its measurements do not, however, correspond with those given in the original description in Voy. Blossom; but it is expressly stated that the specimens described were in bad condition, and may not be entirely reliable. It is, at any rate, very closely allied to the European species that we have just mentioned.

With special reference to the present bird, we shall look with much interest for the results of future zoological investigations in the northwestern territories of the United States. There is at the present time no field more inviting to the American naturalist. While much has been done in California, New Mexico, and Texas, the extensive regions which we have above designated have scarcely been entered upon, and will yet contribute much to the fauna of our country.

DIOMEDEA NIGRIPES. — AUDUBON.

THE BLACK-FOOTED ALBATROSS.

PLATE XXXV. ADULT MALE.

THOSE birds whose homes are the sea-coasts and islands, and whose lives are spent in gleaning a subsistence amongst the billows or by the shores of the ocean, have always been objects of interest both to the naturalist and the general observer. Idly reposing on the rocky crag or the sand-bank, or boldly sweeping the surface of the waters alike in the calm and amidst the fury of the tempest, few having the opportunity have failed to mark the sea-birds as a feature in the wild scenery peculiar to the localities for which they are fitted by nature, and perhaps to associate them with the adventurous character of our useful fellow-men whose profession it is, in the beautiful language of the liturgy, to "go down upon the deep."

The large majority of the many birds that derive their subsistence from the productions of the Ocean, live habitually on its shores, or venture only short and easily-regainable distances from the land. This is the case with the numerous genera comprising the Ducks, Swans, and Geese, as well as the Pelicans, Cormorants, Penguins, and others. These, for the greater part, frequent the margins of the bays and estuaries, and many of them are almost as much birds of the land as of the sea. The Penguins in fact having but rudiments of wings, and incapable of flight, are necessarily restricted, though performing very remarkable migrations by swimming. These extraordinary birds are peculiar to the southern hemisphere, and have been met with amongst the ice and snow of the highest latitudes which navigators have succeeded in reaching within the Antarctic circle.

The bird which is the subject of our present article, is one of a group of species which, possessing great powers of flight and swimming with facility, do not content themselves with the vicinity of the coast, but venture boldly out to sea. The largest and best known species, the Wandering Albatross, has been observed by voyagers at a distance of two thousand miles or upwards from land; and it is even supposed that it performs a flight across the Atlantic from Cape Horn, or about its latitude, to the Cape of Good Hope. The smaller species, of which the present is one, do not venture on so long flights, but several voyagers have recorded their having been seen at two to five hundred miles out at sea.

On the sea-coast of America, on the Atlantic, the Albatrosses are found inhabiting only a portion of the shores of the southern division of this continent north of Cape Horn, but on the Pacific they are abundant throughout the extent of the continent.



The Black-necked Stilt.

On Sale by Wm. E. Hitchcock

Himantopus mexicanus

Printed & Col'd by J. Bowen, Phila.

The species that we present to the reader in the present plate, was discovered on the coast of California by the late John K. Townsend, M. D., and was first brought to notice by Mr. Audubon, in his Ornithological Biography, V., p. 327, but the specimen appears to have been accompanied by no notice of its history.

Since the period of its discovery, this bird has been again observed only by Dr. Heermann, who has kindly furnished the following note from his Journal:—

“The Black-footed Albatross abounds on the coast of California and southward, as do several other species of this genus. It is commonly to be seen skimming over the waves in its flight, and following in the wake of vessels, to pick up the refuse scraps thrown overboard. With the voracity characteristic of these birds, it seizes with little discrimination on whatever is thrown into the water, and of this propensity advantage may be taken by baiting a hook, by which, when seized, the bird is easily secured. From the stern-ports of our ship, during a voyage by sea to California, I have thus captured eight or ten specimens of this and other species of this genus in a single morning. All the species much resemble each other in habits, so far as my observations extend.

“On the coast of California, I observed a White Albatross much smaller than the large *Diomedea exulans*, but not having succeeded in procuring it, I cannot designate the species.”

The small white species alluded to by Dr. Heermann, is probably new to the ornithology of North America. Of the species known as inhabitants, we may say of the Pacific ocean, several have not heretofore been noticed by naturalists on the shores of the United States.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS DIOMEDEA. Linnæus, Syst. Nat. I., p. 214. (1766.)

Size large; general form short and compact; wings very long; bill straight, much compressed, hooked at the tip; both mandibles usually with lateral grooves; apertures of the nostrils tubular; first primary longest; secondaries short; tail short; legs moderate; feet large.

DIOMEDEA NIGRIPES. Audubon, Ornith. Biog. V., p. 327. (1839.)

FORM. Medium sized or rather small for a bird of this genus; bill straight, hooked at the tip; upper mandible expanded on the forehead, its basal edge forming a crescent very distinct from the frontal feathers; tubular nostrils prominent; wing long; first quill longest; tail short, nearly square at the tip; tarsi short; feet large; tibia naked above the joint with the tarsus.

DIMENSIONS. Total length of skin, 26 inches; wing, 19; tail, 5 inches.

COLORS. Plumage at the base of the bill pale brownish-white, of which color there is also a spot behind and under the eye; entire other plumage

above and below sooty brown, darkest on the back and wings, lighter on the under parts, and having a gray tinge on the breast; bill dark; tarsi and feet black.

HAB. Western Coast of North America. Spec. in Mus. Acad., Philada.

OBS. This species much resembles in colors and general appearance the Dusky Albatross (*Diomedea fuliginosa*, Gm., which is *D. fusca*, Aud.), but may at once be distinguished by the color of the feet, which in the present bird are black, and in the other yellow. In *D. fuliginosa*, the tail is much longer and wedge-shaped, and the upper mandible extends in a point into the plumage of the head in front, instead of being as above described in the species now before us.

It is a species apparently peculiar to the western coast of America; but as illustrative of the very extensive range of these birds, we may mention that several species, which are common on the Pacific coast of this continent, are also met with on the shores of Australia. The Great Wandering Albatross, the Dusky Albatross, and the Yellow-nosed Albatross (*D. exulans fuliginosa* and *chlorhynchus*), are given as birds of that continent in Mr. Gould's magnificent work, "The Birds of Australia," and are now well known to be inhabitants of the western shores of the continent of America.



The Horned Lark.

Or. Store by Wm. E. Hitchcock

Geococcyx mexicanus. (Lm.)

Printed & Col'd by J. T. Bowen, Phil.

GEOCOCCYX MEXICANUS. — (GMELIN.)

THE GROUND CUCKOO. THE PRAIRIE COCK. THE PAISANO. THE
CORRE-CAMINO.

PLATE XXXVI. ADULT MALE.

OF the many birds of Western America, the history of which has been brought to light by the recent researches of our countrymen and fellow-laborers in the great field of zoological science, that now before the reader is one of the most curious and interesting. Its existence has been known to naturalists since the time of Hernandez, who, as early as 1651, in his "New History of the Plants, Animals, and Minerals of Mexico," gives a short account of it, as one of the most remarkable of the birds that came under his observation. Though partially known for so long a period, and having received various names from European naturalists, who have described specimens met with in museums, there was extant no satisfactory account of this bird previous to the incorporation of countries which it inhabits with the confederacy of the United States, and the consequent facilities afforded to the investigations of American naturalists.

This bird is especially remarkable for great swiftness of foot, and in fact appears to be almost unrivalled in that respect by any other of our North American species, not even excepting the Grouse, Partridges, or any other of the smaller gallinaceous birds. These, though possessing the ability to run short distances very swiftly, are incapable of sustaining a protracted chase like the present bird. In Mexico, and the adjacent portions of the United States, it is not unusual, as a matter of amusement, to try the speed of our bird by pursuing him on horseback, or by chasing him with dogs, under which severe test of his fleetness, he acquits himself very creditably, and makes, as we shall see presently, a longer race than is usually expected by his pursuer. He evidently possesses both speed and bottom, unrivalled by any fair competition in ornithological pedestrianism, so far as its annals are chronicled, or the present writer's information on that subject extends.

Clothed in plumage of agreeable and unusual colors for a Northern species, and habitually frequenting the ground, walking or running with its long tail carried erect, and assuming a variety of grotesque attitudes, it is not surprising that this bird has attracted the attention of nearly all our naturalists and travellers who have visited its native regions. Through their exertions, it is now to be found in nearly all our museums and private collections, and many facts respecting it have been placed on record.

Though terrestrial in its habits, and exhibiting in some degree the manners and habits of the gallinaceous birds (the Pheasants, Partridges, Grouse, &c.).

this bird is by no means to be classed in that division of the ornithological kingdom. It is a Cuckoo, and a relative of the celebrated bird of Europe so long known as to have become classic, and of the unobtrusive and plain-plumaged little birds of the United States, of the genus *Coccyzus*, popularly known by the name of Cow-birds, or Rain-birds. Our present bird is a representative of the gallinaceous form, in the family of Cuckoos. Throughout the animal and vegetable kingdoms, and in every division or subdivision of whatever character, five primary groups or forms present themselves. In birds and all their groups, these are: the typical, or bird-like form; the predatory, or rapacious; the gallinaceous, or walking; the grallatorial, or wading; and the natatorial, or swimming form. In the group of Cuckoos, which is quite extensive, and species of which are found in nearly all parts of the world, the bird now before us belongs to the subdivision comprising the gallinaceous or walking Cuckoos, and is a striking example of that peculiar form in the great circle of birds, and of the prevalence of a law which is universal, and not difficult to demonstrate.

The first American naturalist who observed the bird now before the reader, was Dr. William Gambel, and a description by him will be found in the Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. II., p. 263 (1845). Subsequently, it has been noticed by nearly all naturalists who have visited California, New Mexico, or Texas, and interesting contributions to its history are contained in their publications relating to the ornithology of those countries.

Our esteemed friend, Col. George A. McCall, with his usual clearness and scientific accuracy, gave the first satisfactory account of this bird, in the Proceedings of the Philadelphia Academy, III. p. 234 (July, 1847):

“Although the toes of this bird are disposed in opposite pairs, as in other species of his family, yet the outer toe being reversible, and of great flexibility, is in either position aptly applied in climbing or perching, as well as on the ground. Thus he at times pitches along the ground in irregular but vigorous hops; and again, when the outer toe is thrown forward, he runs smoothly, and with such velocity, as to be able to elude a dog in the *chaparral*, without taking wing. He feeds on *coleoptera*, and almost every description of insects, and near the river Nueces, where the snail (*Lymanæus stagnalis*) abounds, it is also greedily eaten. These he snatches from the ground, or plucks from the low branch of a bush; and as he rarely wanders far from his abode, the prize is carried to a particular spot, where the shell is broken with his strong bill, and the animal devoured. Piles of these shells are often found that would fill half a hat crown.

“Although dwelling principally on the ground, he is ready and expert in catching his prey in the air, in which act his movements are full of animation,—bounding from the ground with a sudden impulse to the height of eight or ten feet; his wings and tail are seen expanded for a scarcely-appre-

ciable instant, and his bill is heard to snap as he takes his prey, when he drops as suddenly to the spot from which he sprang. Here he will stand for a moment, his legs apart, and his tail flirled on one side with a wild and eccentric expression of exultation in his attitude, before he scampers off under cover of the thick *chaparral*. At first, I thought,—as is the general impression among the Mexicans,—that his powers of flight were extremely limited; but he will, when suddenly alarmed in open ground, rise with a light, quick motion, and continue his flight over the bushes for some hundred yards, apparently with an ease that would argue the ability to sustain a longer flight.

“Though fond of solitude and shade, he will, at an early hour in the morning, climb to the top of a straight leafless branch, there to sit and enjoy the first rays of the sun.

“He is said by the Mexican rancheros to build his nest of loose sticks, either in a low, thick bush, or in close cover on the ground. The eggs are said by them to be two or three in number, and of a whitish color.”

We have again to express our obligations to Col. McCall for the following contribution to our present article:—

“I never was so fortunate as to find the nest of this bird, yet I had frequent opportunities of witnessing its manners and habits in Texas, in New Mexico, and in California, between the years 1846–52.

“Of shy and retiring disposition, the *G. viaticus* is most often met with singly. I have, however, frequently seen the male and female associated during the later period of the year, as well as in spring and summer; the former, at all seasons, being easily distinguishable by his larger size and more brilliant plumage. Whether the pairs I thus met were mated for life, or for the year, or were merely accidentally living in company, I am unable to say—I simply state the fact; and I well recollect my fruitless efforts, in Texas, for several successive days in autumn, to secure a pair that inhabited a large *chaparral* near which I happened to be encamped at the time. The male was a remarkably fine bird, but evidently an old and cautious fellow; he would come just without the thicket, followed by the female—and there, with neck outstretched, cast a searching glance around; then, if an enemy appeared, even in the distance, he would instantly retreat to his impenetrable abode trebly fenced with thorns. In a little while, he would re-appear at another point, where, if the coast seemed clear, he would, closely followed by his mate, begin to search for grass-hoppers and other insects, but never venture more than a few paces from the border of the thicket. Thus it was impossible to approach him in open ground; and such was his constant caution and vigilance that, although I more than once lay in wait for the couple, which I regularly saw in the morning hours, I never succeeded in getting within gunshot.

“When suddenly surprised, I have seen this bird rise on wing and fly considerable distances, in order to gain close cover, the flight being effected by

regular flappings, and executed, apparently, with ease; though the bird did not rise more than six or eight feet from the ground.

"The individuals that I killed in the fall and winter seasons, invariably were excessively fat, and their crops were usually filled with snails and various coleoptera. I do not recollect that I ever found in their stomachs the remains of lizards or other reptiles.

"The *Paisano* (countryman), as this bird is called by the Mexicans, or *Corre-camino* (run-the-road), as the native Californians designate it, is often met in the unfrequented roads that traverse forests of low brushwood, being enticed from its sombre retreats to the openings, in search of its favorite food. And here is often afforded the traveller an opportunity of witnessing its surpassing swiftness of foot. I have several times tested its speed with a good horse under me, and I have in truth been astonished at the almost incredible rate at which it passed over the ground. On one occasion, when approaching Limpia creek (W. Texas), with a small party, on my way to El Paso, I discovered a fine male *Paisano* in the open road, about one hundred yards in advance. For amusement, I put spurs to my horse and dashed after him, followed by one of my men. For full four hundred yards, I ran him along a road level and smooth as a floor; and over which, with straightened neck and slightly-expanded wings, he swiftly glided, seeming scarcely to touch the ground. And when, at last, he deemed it prudent to seek shelter in the thicket alongside, I had not reduced the distance between us more than fifty yards.

"I was told on the frontier that the Mexican rancheros do sometimes run down and capture the *Paisano* when they find him wandering on more open ground; and such I think is probable, for the one to which I have just referred was going, even to the moment at which he *took cover*, at a rate of speed that could not possibly have been much longer sustained; nor could he, I think, when so nearly 'blown,' have risen on wing. Such, at least, is the case with the wild turkey, which I have repeatedly captured in the same way, although his power of flight is greater than that of the *Paisano*."

Capt. John P. McCown, of the United States Army, also observed the *Paisano* in Texas; and in his observations on the birds of that State, in the Annals of the New York Lyceum of Natural History, VI. p. 9, we find the following:—

"Often in my wanderings through the *chapparel* on the Rio Grande, I observed piles of broken snail-shells, and always near some hard substance, such as a bone, or hard piece of wood, which had evidently been used in breaking the shells. I made many conjectures as to the probable animal, but never suspected that a bird had left these evidences of its peculiar habits. I heard, also, at times, generally in the morning or evening, a sound very similar to that made by some Woodpeckers, rapidly beating their bills upon an old dry tree. This was also a mystery, as I could find no Woodpeckers

near the place where the sound came from. Upon inquiry of a Mexican, I was told that it was the *Paisano* breaking the snail-shells to get at the snail, which explained at once both the noise and the mutilated shells. I was afterwards so fortunate as to see a bird so occupied. It took the snail in its bill and beat it upon the hard substance, striking faster and faster, until the shell broke.

"A few of these birds are to be found on the Rio Nueces. They run with great speed, seldom taking to wing. I have seen them on trees apparently observing the vicinity. I had a young bird of this species, about half-grown, but it refused to eat, and soon died; and I have seen some in coops, and have been informed that they have been tamed.

"When approached, this bird runs very swiftly until near cover, when it stops and reconnoitres the intruder, gives its tail a flirt, and away it goes again.

"In 1846, on the mountains between Monterey and Saltillo, I saw a pair of birds much like these, but much smaller. I observed them for some time, and feel satisfied that they were another species. The snail that seems to form the principal food of these birds is found sticking to almost every bush, and some are literally covered with them."

In California, this bird was frequently noticed by Dr. Heermann, from whose manuscripts in our possession we have permission to make the following extract:—

"We found this bird throughout California inhabiting the most arid portions of the country. It often crossed our path, or ran before us for a short distance on the road, dashing, when alarmed, immediately into the *chapparel*, in which its swiftness of foot enabled it to readily elude pursuit. It may, however, be overtaken when followed on horseback over the vast open plains in which it is found, if no friendly bush offers it a shelter. When closely chased, if on an elevated point, it will sometimes fly, but appears to prefer sailing downwards. I once saw a specimen captured by a couple of dogs, their appetites whetted by recent success in overtaking and bringing down a Prairie wolf, or cayote.

"The stomachs of all the specimens that I examined of this bird were filled with the grass-hoppers and large black beetles found on the plains. The nest, built on the branches of the cactus, is formed of loose sticks, thrown negligently together, in the same manner as that of the yellow-billed Cuckoo of the United States (*Coccyzus americanus*). It contains two large, nearly spherical, white eggs.

"I have never witnessed the following, but was gravely assured of its truth by several old Californians: It is said that this bird, on perceiving the rattlesnake coiled up asleep, will collect the cactus and hedge him around in a circle, out of which he is prevented from escaping by the prickly points

opposing him on every side ; and becoming enraged, strikes himself, and dies from the effects of his self-inoculated venom.

“ This bird is common in Western Texas and on the Rio Grande.”

This remarkable bird has been found in the vicinity of Fort Webster, New Mexico, by Dr. Henry, and was also noticed in that country and in Texas by Mr. Clark, Mr. Schott, and Dr. Kennerly, and in Mexico by Lieut. Couch.

Though neither of the authors above cited have mentioned that this bird devours reptiles as well as insects and snails, that fact is stated by Dr. Gambel in his paper on the Birds of California, in the first volume of the quarto Journal of the Philadelphia Academy, and it is so represented in some spirited sketches by Mr. Arthur Schott, now attached to the United States and Mexican Boundary Surveying party, whose drawings of this bird made in its native wilds are in the possession of our valued friend, Professor Baird, of the Smithsonian Institution. It is probable that although it may prefer insects, other small animals afford suitable food.

Lieut. D. N. Couch, of the U. S. Army, to whom we have been indebted for other valuable contributions, has, with his usual kindness, added to our present article the following interesting notice of this bird as an inhabitant of Northern Mexico :—

“ This bird was first met with in Southwestern Texas, near the Rio Grande, where it is called ‘ Prairie Cock ’ by the inhabitants. Few or no opportunities occurred for me to observe it carefully, until I found myself in the dreary chapparel districts of Tamaulipas, and next beyond the Sierra Madre.

“ The chapparel is its home. Equally avoiding the forests of high trees or the open prairies,—in the former of which its short wings would preclude an easy flight to the branches, and in the latter, for the same reason, it would be unable to escape from the numerous hawks of various species that are ever hovering over the arid wastes of that region. Once only I saw it perched near the top of a stout Mesquite tree, though not many feet from the ground.

“ So far as I have observed, this bird rarely takes to wing, but with head lowered and tail nearly horizontal ; crouching to the ground, it runs without using its wings, with incredible swiftness ; stopping suddenly, its long and beautiful tail is raised and depressed with as much grace as a fan in the hand of an accomplished senorita.

“ In one of my excursions, I saw a wolf chase a hare (*Lepus texianus*), but was distanced in a few seconds, in the short race, a bird of this species was started, and the wolf in turn tried its fleetness, with the same result very distinctly arrived at. Apparently much disappointed, he looked at me for a moment, with an expression that seemed to say, “ I have half a mind to try you ; ” but he turned off sulkily and trotted away, leaving me quite satisfied with his conclusion.

"Pa-i-san-o is the name by which this bird is known to the Mexicans. They hold it in high estimation on account of its enmity to the rattlesnake, which it usually succeeds in killing in fair combat. Notwithstanding that it is by no means deficient in courage, there is scarcely one of the feathered tribe that is so quiet and harmless in its habits. I have never noticed any note except a weak scream, and that very seldom. It is apparently not social, never occurring in flocks, not a wanderer to much extent, and though almost a hermit, is the most pleasing and friendly-looking inhabitant that lives only in the chapparel."

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *GEOCOCCYX*. Wagler, *Isis*, 1831, p. 524.

General form lengthened and rather slender; bill long, straight, strong, compressed, curved at the tip; wings short, rounded; fourth and fifth primaries longest; first short; tail long, graduated; legs long, especially the tibiae; tarsi covered with wide transverse scales, very distinct in front; toes moderate, covered with scales; claws curved, flattened laterally. An American genus, containing two or three species only, all of which inhabit California, Texas, and Mexico.

GEOCOCCYX MEXICANUS. (Gmelin.)

PHASIANUS MEXICANUS. Gm., *Syst. Nat.*, II. p. 741. (1788.)

GEOCOCCYX VARIEGATUS. Wagler, *Isis*, 1831, p. 524.

DIPLOPTERUS VIATICUS. Boie, *Isis*, 1831, p. 541.

"*CUCULUS VIATICUS*. Licht. *Mus. Berol.*" Wagler and Boie, as above.

SAUROTHERA MARGINATA. Kaup, *Isis*, 1832, p. 991, pl. 26.

SAUROTHERA CALIFORNIANA. Less., *Ann. du Mus.*, Paris, 1835, p. 121, pl. 9.

LEPTOSTOMA LONGICAUDA. Swains., *Cab. Cy. Birds*, II. p. 325. (1837.)

"*SAUROTHERA BOTTÆ*. Blainville."

UPUPA MEXICANA. Gm., *Syst. Nat.*, I. p. 467?

FORM. Head above with elongated, erectile, crest-like feathers. A large bare space around and behind the eye extending towards the occiput; wings short; tail long; legs long, stout; tarsus with about eight or nine wide and strong scales in front.

DIMENSIONS. *Male*.—Total length of skin, about 22 inches; wing, $6\frac{1}{2}$; tail, 11 inches. *Female*, smaller.

COLORS. *Male*.—Space around and behind the eye, in the living bird, yellow, with a large red spot on its most posterior part; plumage of the head above dark blue, with a metallic lustre, every feather edged with reddish fulvous and white; entire other upper parts dark metallic green, darkest on the neck behind and on the back; lightest on the wings and central feathers of the tail; all the upper plumage edged with white, and very narrowly with pale fulvous; primary quills dark brown, with a green metallic lustre, and edged

with white on their outer webs; upper coverts of the tail and two central tail feathers green, with metallic lustre, and edged with white; other feathers of the tail deep shining blue, narrowly edged, and widely tipped with white, and having in some lights a green lustre; under parts white, slightly tinged with ashy and very pale yellowish; and on the throat and neck before with longitudinal stripes of dark greenish-brown; bill and feet light bluish. *Female* similar, but with the colors less vivid.

HAB. California, New Mexico, Texas, and Mexico. Spec. in Mus. Acad., Philada., and in Nat. Mus., Washington city.

OBS. As the reader will have discovered from our preceding synonymes, an unusual superabundance of names has been proposed for this bird. We have no doubt, however, that it is the *Hoitlallottl* of Hernandez (Nova, plantarum, animalium et mineralium Mexicanorum, Historia, p. 25. Folio, Rome, 1651), whose description is cited by both Buffon and Latham. On the faith of the notice by the latter (Synopsis of Birds, II. p. 723), Gmelin gave the name *Phasianus mexicanus* as cited above. The description by Hernandez is short and not very accurate; but we could mention many species of birds, the original descriptions of which are quite as much so, both ancient and modern. Prof. Wagler, in his description of *Geococcyx variegatus*, above alluded to, expresses the opinion that his bird is the same as that described by Hernandez; and Mr. Strickland, in Ann. and Mag. of Nat. Hist., VIII. p. 544 (1842), arrives at the same conclusion.

We regard it as at least possible, too, that this bird is the *Upupa mexicana* (Gmelin, Syst. Nat., I. p. 467), which is the "Mexican Promerops" (Latham, Syn., II. p. 691). The descriptions are founded on a figure in Seba (pl. 45, fig. 3), that about as accurately represents this species as any other; which can also be said of his description. In Seba's figure it will be observed that three toes are directed forward, which might appear to be a difficulty; but in reference to that point we ask attention to Col. McCall's valuable contribution in a preceding page. There is, too, some peculiarity intended or attempted to be represented in the figure to which we allude.

The sexes of this bird differ in size very considerably; and there are, also, variations in size and measurements, such as comparative lengths of their bills and tails between different specimens. We have seen a large number of specimens, from various localities, but of one species only. Though we have been constantly on the watch for it, we have never detected the smaller species alluded to by Captain McCown, which is very probably *Geococcyx affinis*, described by Dr. George Hartlaub, of the State Museum of Bremen, one of the most learned and accurate of European ornithologists. That species may be more an inhabitant of the mountainous or hilly country than the subject of our present article.



The Whyp - Fern - Kelly

VIREOSYLVIA ALTILOQUA. — (VIEILLOT.)

THE LONG-BILLED FLYCATCHER. THE WHIP-TOM-KELLY. THE
JOHN-TO-WHIT.

PLATE XXXVII. ADULT MALE.

THIS little bird is very similar in form and general appearance to the Red-eyed Flycatcher (*Vireosylvia olivacea*), of the United States, but is larger, and is distinctly characterized by the dark line on the side of the neck. It appears to possess much the same habits as the common species just mentioned, and others that inhabit the northern division of the continent of America. Passing its life, for the greater part, searching for insects amongst the thick foliage of the forest, in which its color favors concealment, it utters its peculiar notes, evidently of the same general character, but much louder and quite different from those of either of its northern brethren.

Though long known as a bird of the West Indies, and represented by Mr. Gosse to be abundant in the Island of Jamaica, it has but recently been discovered within the limits of the United States. Vieillot, it is true, gave it as a North American species, and in his fine work, which is of standard value in the history of our birds, figures it accurately, but from specimens obtained in the West Indies. It was first ascertained to be a summer visiter in Florida, by Dr. A. L. Heermann, who observed it in considerable numbers in that State, at a season when it was certainly engaged in the duties of incubation; but it has as yet never been noticed in any other part of the United States. It is probable, too, that it inhabits Cuba, but the several able naturalists of that Island have not detected it, or at least have not stated it to be different from the common Red-eyed Flycatcher.

For our article on this bird, Dr. Heermann has, with great kindness, furnished the following notice:—

“Charlotte Harbour is situated on the Gulf of Mexico, and is studded with numerous small islands or keys, as they are called, on which grows the cocconut, said to be brought hither from the West Indies by the tides, and being thrown on the shore, takes root and flourishes. Some of these islands, during my visit, I may say almost swarmed with Herons, Cormorants, Snake-birds, Spoonbills, and Pelicans, engaged in attending to their nests, and raising their young. The wild fig, orange, lemon, palmetto, and pine, abound—the first of which is the principal food of several species of birds, while the large numbers of fishes everywhere in the surrounding waters afford ample subsistence to those that I have mentioned. On the sand-bars, various species of Terns were to be found in abundance, also engaged in incubation, while

the Fish Crow, ever on the alert to seize the eggs or young, or the captured prey of any of these species when left unguarded, was ever to be seen on the wing, and at a distance, and not to be approached easily, I have frequently seen flocks of Flamingoes dredging perseveringly for shell-fishes, or standing in groups, looking almost like files of soldiers in red uniforms.

"I mention these birds because, like the little Long-billed Flycatcher, and like the cocoa-nut, too, if the prevailing belief is correct, they appear to be visitors only from a more southern clime. They seem to have reached Florida in the course of a northern migration, and although remaining for a season, retire periodically, again to appear in due time.

"In this vicinity, I met with the Long-billed Flycatcher, which, coming with his larger and more conspicuous fellow-travellers, to which I have alluded, appears to be a more transient visitant, performing the duties of incubation on this the northern district of his range, and soon retiring southwardly to the West Indies. This bird much resembles in manners and appearance the Red-eyed Flycatcher of the Northern States, but is not, I think, its equal as a vocalist. His notes, at the season when I heard them, were not as numerous, nor his song so long-continued. They are quite different from those of the Red-eye, but clear and musical, and very distinctly uttered. He is constantly on the search for insects, and appeared to me to be more active than either of the northern species, darting about amongst the foliage, or peering into a crevice or recess in a branch, or a spider's web, with his back downwards, like the warblers,—or occasionally chasing a flying insect, in the manner of the Pewee Flycatchers. These actions were usually accompanied by his song, as is the case with the Red-eye and the Warbling Flycatchers. This species was not abundant, though I saw it frequently, and obtained several specimens."

The name, "Whip-tom-kelly," is applied to this bird in Brown's Jamaica, one of the standard authorities on that Island (the Civil and Natural History of Jamaica, by Patrick Brown, M. D., London, 1789, folio), as its popular appellation, and has been transferred to the works of various authors. Mr. Gosse, however, in his pleasant volume on the Birds of Jamaica, mentions that he had never heard this designation.

The naturalists of Jamaica and Cuba appear to have considered this bird as identical with the Red-eyed Flycatcher. The latter may be a visitor, most probably, in the winter, to those islands, but the present is undoubtedly the resident summer species, at least in Jamaica. The figure in Edward's Gleanings of Natural History (V. pl. 253), is particularly stated to have been made from Dr. Brown's specimen brought from Jamaica, and clearly represents the present bird. Mr. Swainson, in *Fauna Boreali Americana*, Birds, p. 237, in his description of *Vireo longirostris*, which is this bird, mentions having received specimens from the Islands of Jamaica and St. Vincent.

As a bird of Jamaica, this little Flycatcher is described in his usually

agreeable manner, by Mr. Gosse, in his work above alluded to. Holding ourselves in duty bound, we take the liberty of transcribing from his pages as followeth, premising that he calls this bird the "John-to-whit:"—

"Much oftener heard than seen, though not unfamiliar to either sense, this sober-colored bird is one of those whose notes have such a similarity to articulations as to procure them a common appellation. The Flycatchers, in general, are not very vociferous, but this is pertinacious in its tritinous call, repeating it with energy every two or three seconds. It does not ordinarily sit on a prominent twig, or dart out after insects, though I have seen one in eager but unsuccessful pursuit of a butterfly (*Terias*); but it seems to love the centre of thick woods, where it sits announcing its presence, or flits from bough to bough as you approach, so that it is not easy to get a sight of it.

"This bird does not winter with us, but leaves with the Grey Petchary (*Tyrannus Dominicensis*), at the beginning of October. It returns early—and like the bird just named, evidently makes an eastward progress, arriving at the southwest end of the island first. On the 26th of March, on my return to Bluefields, after a visit to Spanishtown, I heard its well-known voice, but my lad had noticed it a week before. From this time, every grove, I might almost say every tree, had its bird, uttering, with incessant iteration and untiring energy, from its umbrageous concealment, 'Sweet-John!—John-to-whit!—Sweet-John-to-whit!—John-t'-whit!—Sweet-John-to-whit!' I can scarcely understand how the call can be written 'Whip-tom-kelly,' as the accent, if I may so say, is most energetic on the last syllable. Nor have I ever heard this appellation given to it in Jamaica. After July, we rarely hear 'John-to-whit'—but, 'to-whit—to-who,' and sometimes a soft, simple chirp, or *sip, sip*, whispered so gently as scarcely to be audible. This, however, I have reason to believe is the note of the young, for I have heard young ones repeatedly utter it, when sitting on a twig, receiving from time to time, with gaping beak and quivering wing, the food contributed by the dam.

"The food of the John-to-whit is both animal and vegetable. In March, I have found in its stomach the seeds of the tropic birch, and in April, the berries of sweet-wood, in an unripe state. In the same month, I observed one hunting insects by the borders of Bluefields rivulet, in which I was bathing, and so intent was it upon its occupation, that it allowed me to approach within a foot of it before it flew. It sought insects successfully among the grass and low herbage, perching on the stalks of the weeds, and jumping out after stationary, as well as vagrant, prey. I observed it eat two spider's nests, which it masticated as if peculiarly savory. As it sat, it vomited a little white body, which I found to be the globose seed of the mistletoe berry.

"Incubation takes place in June and July. The nest is rather a neat structure, though made of coarse materials. It is a deep cup, about as large as

an ordinary tea-cup, narrowed at the mouth, composed of dried grass, intermixed with silk-cotton, and sparingly with lichen and spiders' nests, and lined with thatch-threads. It is usually suspended between two twigs, or in the fork of one, the margin being over-woven so as to embrace the twigs. This is very neatly performed. Specimens vary much in beauty,—one before me is particularly neat and compact, being almost globular in form, except that about one-fourth of the globe is wanting, as it is a cup. Though the walls are not thick, they are very firm and close, the materials being well woven. These are fibres of grass-like plants, moss, a few dry leaves, flat papery spiders' nests, with a little cotton or down for the over-binding of the edges. It is lined smoothly with fibres, I know not of what plant, as slender as human hair. Another nest, similarly formed, has the cavity almost filled with a mass of white cotton, which looks as if thrust in by man, but that those filaments of the mass that are in contact with the sides, are interwoven with the other materials. As it is picked cotton, it must be a bit stolen from some house or yard, not plucked by the bird from the capsule. The eggs, commonly three in number, are delicately white, with a few small red-brown spots thinly scattered over the surface, sometimes very minute and few. Their form is a somewhat pointed oval, measuring nine-tenths of an inch by rather less than thirteen-twentieths."

Our figure is about three-fourths of the size of life, and represents the adult male from one of Dr. Heermann's specimens obtained in Florida.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS VIREOSYLVA. Bonaparte, Geog. and Comp. List of the Birds of Europe and North America, p. 26. (1838.)

Size small, but with the general form compact and stout; bill straight, rather long, wide at base; upper mandible slightly notched near the point; gonys slightly ascending; wing long, second quill usually longest; tail rather short, even; legs and toes moderate in length, slender. A genus containing five or six species, all of which are American. Colors in all known species olive green, narrowly shaded and tinged with yellow.

VIREOSYLVA ALTILOQUA. (Vieillot.)

MUSCICAPA ALTILOQUA. Vieill., Ois. d'Am., Sept. 1, p. 67, pl. 38. (1807.)

VIREO LONGIROSTRIS. Swains., Fau. Bor. Am., II. p. 237. (1831.)

PHYLLOMANES MYSTICALIS. Cabanis, Erichson's Archiv., 1837, p. 348?

TURDUS HISPANIOLENSIS. Gm., Syst. Nat., I. p. 822?

FORM. Bill long, strong, wide at base, with a few pairs of short, weak bristles; wing long; second quill longest; tail moderate, truncate; legs rather long, slender.

DIMENSIONS. Total length of skin, $5\frac{1}{2}$ inches; wing, $3\frac{1}{2}$; tail, $2\frac{1}{4}$ inches.

COLORS. A narrow line of black running downward on each side of the neck, from the base of the lower mandible; head above ashy-olive; other

upper parts olive-green, tinged with yellowish; quills and tail olive-brown, edged outwardly with greenish-yellow; a line of yellowish-white running from the nostril over the eye; between the eye and the bill dark olive; under parts white, nearly pure on the throat, and on the other parts tinged with ashy and greenish-yellow, especially on the sides; bill light corneous; irides red.

HAB. Florida, West Indies, and South America. Spec. in Mus. Acad., Philada.

OBS. We consider it quite probable that this species is the *Turdus hispaniolensis* of Gmelin, as above, which is the Hispaniola Thrush of Latham. The figure in Buffon, Pl. Enl. 273, fig. 1, may represent the same.

This bird may readily be distinguished from all other species by the dark lines on the neck, which seem to be present at all ages.

AMMODROMUS ROSTRATUS. — (CASSIN.)

THE LONG-BILLED SWAMP SPARROW.

PLATE XXXVIII. ADULT MALE.

OF this bird we can give but a very imperfect history. It is one of a group of Sparrows, of which other species inhabit North America, characterized in some measure like the present, by the length and large size of their bills, and their partiality for the vicinity of salt water. Two species, the Sea-side Finch, and the Sharp-tailed Finch (*Ammodromus maritimus* and *caudacutus*), are of frequent occurrence on the shores of the Atlantic, almost throughout the extent of the coast of the temperate regions of North America,—and in New Jersey may be met with in the summer season in considerable numbers, wherever there are salt marshes, or that description of vegetation peculiar to the shores of the ocean, or within reach of its tides. In those localities, frequently of difficult access, these birds rear their young in comparative safety, subsisting on seeds and insects, and seldom attracting attention. They may occasionally be seen, too, on the bare sands of the beach, searching for small marine animals thrown up by the waves.

The present bird is a representative of this group on the shores of the Pacific, and from the notice by its discoverer, which we shall give directly, it appears to be very similar in its habits. It was first observed by Dr. Heermann, near San Diego, California, during his first visit to that country, and has since that time been again noticed only by him. Specimens in excellent plumage and preservation, from his collections, are in the National Museum, Washington city, and in the collection of the Academy of Natural Sciences of Philadelphia.

This bird was first described in the Proceedings of the Philadelphia Academy, VI. p. 184 (Oct., 1852). For our present article, Dr. Heermann has kindly permitted us to make the following extract from his Journals, kept during his former and recent visits to California:—

“In 1851, I procured this bird on the shores of the Bay of San Diego, where, in company with other species, it appeared to be engaged in searching for grass-seeds. During the late Pacific Railroad survey by the party under command of Lieut. Williamson, I again saw it in considerable numbers at Santa Barbara and San Pedro. At the latter places, as at San Diego, it frequents the low, sandy beach, and the heavy sedge-grass which abounds on the shores, feeding on marine insects and seeds thrown up by the tides on the former, and in the latter, finding quick and easy concealment when alarmed or pursued. It appears to be a quiet, unsuspicious bird, and I heard it utter only a short, sharp chirp during the limited time that I had to observe it.”



The large bellied Bush Sparrow

Ammodramus rostratus. Cassin

At present, nothing further is known of this species. The figure in our plate is that of an adult male, and is of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS AMMODROMUS. Swainson, Zool. Jour. III. p. 348. (1827.)

AMMODROMUS ROSTRATUS. (Cassin.)

EMBERIZA ROSTRATA. Cassin, Proc. Acad., Philada., VI. p. 184. (1852.)

FORM. Short, and rather heavy; bill lengthened, strong; wings with the first, second, and third quills longest, and nearly equal; tail rather short, emarginate; legs and feet moderately strong.

DIMENSIONS. Total length of skin, about $5\frac{1}{4}$ inches; wing, $2\frac{3}{4}$; tail, 2 inches.

COLORS. Entire plumage above dull-brownish and cinereous, every feather longitudinally marked with the former, and tipped and edged with the latter, the brown stripes being most strongly marked on the head and back; narrow superciliary lines ashy-white; throat and entire under-parts white, with longitudinal stripes, and arrow-heads of brown on the breast and flanks; stripes of this character forming lines on the sides of the neck from the lower mandible, above which are stripes of white; abdomen and under tail-coverts dull white; wings and tail brown, edged with paler shades of the same color, nearly white on the outer-webs of the external feathers of the tail, deeper and tinged with rufous on the wing-coverts and exposed edges of the secondaries; bill and feet light-colored, the former brownish above (in dried skin).

HAB. California. Spec. in Mus. Acad., Philada., and Nat. Museum, Washington.

OBS. We are acquainted with no species which this bird resembles in any considerable degree, though its general characters are similar to the birds that we have mentioned in the present article. Its bill is remarkably large and strong, and its entire organization robust.

PLECTROPHANES MCCOWNII. — LAWRENCE.

MCCOWN'S BUNTING.

PLATE XXXIX. ADULT MALE AND FEMALE IN SUMMER PLUMAGE.

It is not only in the spring, or at the advent of the month sung by the poets as the real birth of the year, that everywhere in the temperate regions of North America, hosts of feathered travellers arrive, either to remain for a season, or to continue their journey to more northern countries. In the autumn and winter, also, troops of them constantly appear, succeeding each other in some measure according to the earlier or later setting in of winter, or the greater or less severity of that season. Nearly all of the autumnal species, like our summer visitors, proceed to the South to spend the winter—others, coming later, remain during the whole of the winter, and are constantly recruited by new comers of the same species, but at the first opening of spring, return to their homes. Some, as the Purple Finch and the little Snow-bird, come every winter—others, as the Pine Grosbeak, the Northern Linnet, and the two species of Crossbills, only occasionally. Though abundant, perhaps, for one season, years may elapse before either of the birds last mentioned will be seen again by the most diligent collector. At the time of writing the present article (December, 1853), both the White-winged Crossbill and the common Crossbill (*Loxia leucoptera* and *americana*), are abundant in the neighborhood of Philadelphia, the former of which has not before been seen here since the winter of 1835-6. The latter appears more frequently.

In addition to these, we are visited by flocks of several species that are to be found here rearing their young in the summer; but while our bird reared in Pennsylvania has taken an excursion to the South, so his Northern namesake, reared, perhaps, at Hudson's Bay, has done the same, and made Pennsylvania the limit of his journey. The Robin (*Merula migratoria*) is an instance of this description of migration. This bird, in large flocks, is to be met with almost every winter, especially in New Jersey, and wanders much further southwardly and westward. We fancy that we can distinguish a stranger of this species from one "native and to the manor born." The Northern Robin is slightly a larger bird than our summer resident; his colors are a shade darker, and his bill decidedly a clearer yellow. Though not presenting characters sufficient at all to raise a suspicion of distinction in species, the northern bird is clearly of a different race. And so it is, too, with the Red-winged Blackbird, the Meadow Lark, the Golden-winged and the Red-headed Woodpeckers, and other species, all of which come here in



McGowan's Bunting

On Stone by Wm E. Hitchcock

Plectrophanes M. McGowan Lawrence

Lith. Engr'd & Col'd by J. T. Bowen Phil

the winter from more northern latitudes, and in most of which close observation will detect small characteristics of difference in race.

The spring migration is confined to birds that pass the winter in the South, in many cases not beyond the limits of the United States; but there are birds that extend their journey to the islands of the West Indies, to Mexico, and to Central America, and in some instances to South America. Many of the Warblers, several of our common Thrushes and Finches, and various others of our well-known North American species, visit Cuba and Jamaica in the course of the winter, and in both those islands some of them make their appearance while yet the season is not so far advanced in the United States as to incommode them either by the cold or an abridged supply of their favorite food.

The migration of these birds is a curious problem, and regulated by laws entirely independent of the considerations of climate and supply of food. One cannot readily find a reason why a bird that has passed the winter in a tropical or southern latitude, should leave for the North at the coming of spring, when a more plentiful supply of food than has sufficed for its winter support is about to be presented. And then, too, why should birds proceed so far to the North?—to the very confines of the Arctic circle, as many small species do, when the great forests of the middle and northern States offer ample accommodation, and supplies of food certainly equal to those in which they will at last terminate their journey. There are questions here difficult to answer. It would appear that the existence of an animal is predicated on its performance of certain functions antecedently involved in its organization. That its entire history, we may say, is but an answer to the calls of organization. That the organization and the performance of its indicated functions are strictly exponents of each other, the latter modified by circumstances, and the relations of species to each other, dependent in some measure on circumstances, but not produced by them, no more than forms or other physical characters. No feature in the history of an animal is absolutely produced by circumstances. There is, too, the consideration of inherited instincts, and if the faculty of memory, and impressions on it, are transmissible, nearly the whole phenomena of instinct may be explained.

In the western and southwestern countries of North America, within the limits of the United States, various species of northern birds appear in winter that have never been noticed on the Atlantic seaboard. The handsome little bird that we present to the reader in the plate now before him, is one of that description. It appears to be a native of the extensive and little-known regions of northwestern America, migrating in the winter to California, New Mexico, and Texas, where it has been seen by several of our naturalists.

There are several species in Western America of the group to which this bird belongs, all characterized by agreeable and somewhat similar colors. In the States on the Atlantic, the Snow Bunting (*Plectrophanes nivalis*) is their only relative that is of usual occurrence,—though another, the Lapland

Longspur (*Plectrophanes Lapponica*), occasionally appears, and of the capture of which, in the neighborhood of Philadelphia, several instances have come to our knowledge.

Capt. McCown, who discovered this present species in Texas, gives no further account of it than that he shot it in company with a flock of Shore Larks. His notice is in the Annals of the New York Lyceum of Natural History, VI. p. 14. Dr. Henry has obtained it in the vicinity of Fort Thorne, New Mexico. These, with Dr. Heermann, are the only naturalists that have as yet noticed this bird in its native wilds.

During the survey for a route for a railroad to the Pacific, by Lieut. Williamson's party, to which Dr. Heermann was attached, he met with this bird in large numbers, and his collection contains numerous specimens in various stages of plumage. From these we have selected adults of both sexes, from which the plate now before the reader has been prepared. In Dr. Heermann's manuscripts, kindly placed at our disposal for the purposes of our present work, we find this bird thus noticed:—

"I found this species congregated in large flocks with the chestnut-collared Lark Bunting (*Plectrophanes ornatus*), and engaged in gleaning the seeds from the scanty grass on the vast arid plains of New Mexico. Insects and berries also form part of their food, in search of which they show considerable activity, running on the ground with ease and celerity.

"We found this bird, as well as various other species, particularly abundant whenever we struck on the isolated water-holes that occur in this region, these being the only spots for miles around where water can be obtained. When fired at, or otherwise alarmed, they rise as if to fly away, but seem to be irresistibly impelled by thirst to return to the only localities where relief is to be obtained, and where, if the hunter is so inclined, large numbers of this handsome little bird, and others, may be slaughtered with little exertion.

"From Dr. T. C. Henry, of the U. S. Army, I learned that in the spring, large flocks of this species appear at Fort Thorne, apparently on their return to the North, having migrated southwardly the fall previous, and that they leave on the return of mild weather. In several flocks of these birds I noticed also the Shore Lark (*Alauda alpestris*), but it formed a small proportion of the numbers."

The figures in our plate are about two-thirds of the size of life.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS PLECTROPHANES. Meyer, Taschenbuch der deutschen Vögelkunde III. p. 56. (1822.)

Bill short, conical, strong; nostrils basal, partially concealed; wing rather long; first, second, and third quills longest; tail moderate, or short, usually

even at the end, or emarginate; legs and feet moderately strong; hind toe with the claw long, somewhat like that of the Larks (*Alauda*).

PLECTROPHANES MCCOWNII. Lawrence, Annals of the New York Lyceum of Natural History, VI. p. 122. (1851.)

FORM. Bill very strong, wide, and somewhat tumid at base; wing long; secondaries emarginate; tertiaries longer than secondaries; second primary longest; tail rather short, slightly emarginate; legs moderate; hind claw long; coverts of the tail long.

DIMENSIONS. *Male*.—Total length of skin, $5\frac{1}{2}$ inches; wing, $3\frac{1}{2}$; tail, $2\frac{1}{4}$ inches.

COLORS. *Male*.—Head above, from the base of the bill, stripe on each side of the neck from lower mandible, and wide transverse band on the breast, black; lesser coverts of the wing chestnut; neck behind and body above dark brown and brownish-ashy, every feather with a central stripe of the former and edged with the latter; under-parts (except the breast) white, all the feathers, with a basal portion, ashy-black, particularly observable immediately below the black of the breast; quills brown, edged outwardly with yellowish cinereous, on their inner-webs with white; two central feathers of the tail brown, others white, tipped with brown; bill and feet light-colored. *Female*.—Entire plumage above dark brown and brownish-ashy; beneath white, tinged with dull yellowish on the throat and breast; no black on the head or breast.

HAB. California, New Mexico, Texas. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington.

OBS. This little species is strictly of the same group as *Plectrophanes ornatus* and *pictus*, and, like them, appears to be exclusively western. It does not resemble those species in such degree as to be liable to be mistaken for either of them.

The original description of this bird by Mr. Lawrence, as above cited, appears to have been made from its winter plumage. Its dedication to Capt. McCown, we regard as a highly appropriate acknowledgement of his valuable services in the investigation of the ornithology of the southwestern regions of the United States.

RECURVIROSTRA OCCIDENTALIS. — VIGORS.

THE WESTERN AVOCET. THE WHITE AVOCET.

PLATE XL. ADULT MALE.

THIS is a second American species of this singular group of birds, and is as yet only known as an inhabitant of the regions of the far west. This apparent restriction in the locality of the present bird is the more remarkable, as the previously-known species, distinguished as the American Avocet (*Recurvirostra americana*), is widely diffused, having been ascertained to be abundant in the vicinity of Hudson's Bay in the summer season, and thence, through a wide central region of North America, to Texas. Occasionally it is noticed on the coast of the Atlantic, sparingly north of New Jersey, but becoming more numerous southwardly.

This species was discovered at San Francisco, California, by the naturalists attached to H. B. M. ship Blossom, then on a voyage of discovery in the Pacific ocean; and although that occurred about the year 1825, it has been again noticed only by Col. McCall and Dr. Heermann, both of whom, however, represent it as being by no means a rare bird.

With his usual kindness, Col. McCall has furnished the following notice of this bird for our present article: —

"At the village of San Elizario, 22 miles south of El Paso, on the 16th October, 1851, I found small flocks of the Western Avocet feeding along the banks of the Rio Grande, and frequenting the sloughs and pools in its vicinity, whilst moving to the South in the course of their regular autumnal migration. They were tame and unsuspicious, and evidently ignorant of the destructive character of the gun, for its report seemed to create little alarm, even when the discharge carried death into their ranks. To illustrate this, I need only mention the fact that the first flock which came immediately under my observation alighted within twenty yards of the piazza where I was sitting on the morning after my arrival. They waded at once into the shoal water of a 'cut-off' from the river which passed immediately in front of the house, and began to feed. I was near enough to see them immerse their bills into the water, and search the soft mud below for their prey; and as they, from time to time, were scattered, and again assembled in a group, I had ample time and an excellent opportunity to note their manner of feeding. I was soon satisfied that in this respect their habits did not differ from those of *R. americana*, which I had previously seen in great numbers, and closely observed on the borders of the Oso river, in southern Texas. After watching



The White Ibis

them for some time, I took my gun, and at a single discharge, secured five of the dozen that composed the flock. The remainder flew the distance of a stone's throw, and alighting in shoal water, began to feed again without appearing to notice the loss of their companions. I followed them, and in a few minutes procured three more within one hundred yards of the house. During that day, and several successive days that I remained at the post, I saw flocks of from six to ten on their feeding grounds, both morning and afternoon. I shot them, as well as ducks and snipe, daily; and at no time that I recollect, had I any difficulty in approaching within easy gun-shot.

"A few days previously, I had seen a very large flock of these birds near *Val Verde*, some 170 miles further up the river. This flock contained fifty or sixty birds; they rose near me as I fired at a flock of Teal, and circled round in very compact order, presenting the beautiful contrast of their white and black markings, and at length settled on the opposite side of the pond, where they were beyond pursuit. The occasions here mentioned are the only ones on which I have met with *R. occidentalis*.

"On the wing, the flocks were usually closely compacted; the flight was buoyant, and with little exertion of muscular force."

Dr. Heermann found this bird in California, and procured numerous specimens, now in the National Museum, Washington, and in the Museum of the Philadelphia Academy. In his manuscripts we find the following:—

"This species was observed in various parts of California, resorting to the shallow pools, in which it waded breast-deep, usually finding on the soft muddy bottom a plentiful feast of insects and snails. Although partially web-footed, it does not swim, so far as I have noticed, unless wounded, when it takes immediately to the deep water, swimming with great celerity, soon getting beyond range, if not at once disabled by a second shot. I have noticed this bird in abundance on the borders of the reedy swamps which cover a large portion of the lower part of the Sacramento valley."

The upward curve of the bill in the birds of this group, though very singular and characteristic, has not been ascertained to be indicative of any peculiarity of habits.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS RECURVIROSTRA. Linn., Syst. Nat., I. p. 256. (1766.)

Bill depressed, smooth, recurved; wing rather long, pointed; first quill longest; tail short; legs long, moderately strong; toes rather short, partially webbed. A peculiar and somewhat isolated genus, of which a few species only are known, though inhabiting nearly all parts of the world.

RECURVIROSTRA OCCIDENTALIS. Vigors, Zool. Journal, IV. p. 356. (1829.)

FORM. General form rather robust; bill depressed, soft at the tip; wing with the first quill longest; tertiaries longer than secondaries; tail quite

short; legs long; tibia feathered nearly one-half of its length; tarsus covered with scales.

DIMENSIONS. Total length of skin, from tip of bill to end of tail, about $16\frac{1}{2}$ inches; wing, 9; tail, 3; tarsus, $3\frac{1}{2}$; bill, $3\frac{1}{2}$ inches.

COLORS. Back and upper surface of wings brownish black, lightest on the tertiaries, and darkest on the primaries; all other parts white, slightly tinged with ashy on the head above and neck behind; secondary quills white; greater coverts of the wing widely tipped with the same.

HAB. California. Spec. in Mus. Acad., Philada., and Nat. Museum, Washington.

OBS. This strongly-marked species bears some resemblance to the European Avocet, and in fact is more closely allied to it than to the only American species previously known. It is, however, a well characterized and distinct bird.

The sexes of this species differ somewhat in size, the female being slightly the smaller; and in the male, the dark tints are stronger. The latter is represented in our plate.

SYNOPSIS

OF

NORTH AMERICAN BIRDS.

II. ORDER INSESSORES. THE PERCHING BIRDS.

A GROUP containing much the greater number of all known birds, almost impossible to characterise in general terms. The birds of this order are, however, generally organized for perching or living in trees, and have the legs and feet moderately developed and formed for grasping. In this group is found the highest development of the bird-like form of animal life.

I. TRIBE FISSIROSTRES. THE GOATSUCKERS, SWALLOWS, KINGFISHERS, &c.

Bill wide at base; gape very large; feet small, weak; general form adapted to the capture of insects on the wing, and in some of the families to rapid and long-continued flight. This group contains the Goatsuckers (*Caprimulgidæ*), the Swallows (*Hirundinidæ*), the Trogons (*Trogonidæ*), the Bee-eaters (*Meropidæ*), and the Kingfishers (*Halcyonidæ*).

Î. FAMILY CAPRIMULGIDÆ. THE GOATSUCKERS.

Plumage soft, blended, and owl-like. Species generally nocturnal in their habits, or venturing abroad only in the twilight or in the night.

Bill small, weak, generally furnished at the base with projecting bristles; gape very wide; feet usually slender and weak; wings generally long, adapted to long-continued flight. This family is represented in all temperate and tropical regions of the world.

A.

1. GENUS ANTROSTOMUS. Gould, Nuttall. Manual of the Ornithology of the United States and Canada, I. p. 739 (second edition, 1840).

General form plump and robust; head large; bill short, weak, opening to beyond the eyes; gape very large; nostrils basal, oval, prominent; eyes large; wing long; somewhat pointed; second and third quills longest; legs and toes short, feeble; claw of the middle toe pectinated; tail moderate, wide, generally even at the end; bristles at the base of the bill rigid, long,

usually curved at their ends; throat in males with an uninterrupted collar of white; quills with bars of rufous. An exclusively American genus containing six or seven species, more nearly related to typical *Caprimulgus* than any other birds of this family inhabiting this continent, and almost nocturnal in their habits, venturing abroad only by twilight or in the night.

1. *ANTROSTOMUS CAROLINENSIS*. (Gm.) The Chuck-wills-widow. The great Carolina Goatsucker.

CAPRIMULGUS CAROLINENSIS. Gm., Syst. Nat., II. p. 1028. (1788.)

CAPRIMULGUS LUCIFUGUS. Bartram, Travels, p. 292. (1793.)

CAPRIMULGUS RUFUS. Vieill., Ois. d'Am., Sept. 1, p. 57. (1807.)

CAPRIMULGUS BRACHYPTERUS. Stephens, Gen. Zool., X. p. 150. (1817.)

Catesby's Carolina, I. pl. 8; Vieill., Ois. d'Am., Sept. 1, pl. 25; Wilson, Am. Orn., VI. pl. 54, fig. 2; Aud., Birds of Am., pl. 52, Oct. ed., I. pl. 41.

Largest of the North American species. General form broad and robust; wing long; second quill longest; tail ample; legs short; bristles at the base of the bill strong; each one ciliated; entire upper parts dark brown, minutely dotted with reddish fulvous, and with many of the feathers having large, longitudinal stripes of black; inferior parts similar to the upper, but more minutely marked with black, and marked with circular fulvous spots; throat with an uninterrupted collar of white, running into a collar of fulvous on the neck behind; quills with irregular alternate bars of reddish fulvous and brownish-black; middle feathers of the tail reddish fulvous, mottled with, and with irregular bars of black; other feathers of the tail similar, but tipped with silky white, frequently tinged with reddish fulvous on their outer-webs. Female like the male, but without white on the tail-feathers.

DIMENSIONS. Total length, about 12 inches; wing, $8\frac{1}{2}$; tail, $5\frac{3}{4}$ to 6 inches.

HAB. Southern United States. South Carolina (Gibbes); New Mexico (McCall); Cuba (Lembeye); Florida (Bartram). Spec. in Mus. Acad., Philada.

OBS. This fine species is frequently met with in the southern and southwestern States, and is much the largest of the North American birds of this family.

2. *ANTROSTOMUS VOCIFERUS*. (Wilson.) The Whip-poor-will.

CAPRIMULGUS VOCIFERUS. Wilson, Am. Orn., V. p. 71. (1812.)

CAPRIMULGUS CLAMATOR. Vieill., Nouv. Dict., X. p. 234. (1817.)

"*CAPRIMULGUS VIRGINIANUS*. Linn. Gm." Vieill., Ois. d'Am., Sept. 1, p. 65.

CAPRIMULGUS MACROMYSTAX. Wagler, Isis, 1831, p. 533?

Vieill., Ois. d'Am., Sept. 1, pl. 23; Wilson, Am. Orn., V. pl. 41; Aud., Birds of Am., pl. 82; Oct. ed., I. pl. 42; Nat. Hist. N. Y. Birds, pl. 27, fig. 39.

Smaller than the preceding; wing with the third quill slightly longest; tail ample, rounded; neck with an uninterrupted collar of white before and fulvous behind; head above ashy-gray, with a longitudinal stripe of brownish-black; back and rump dark brown, with minute points and irregular lines of cinereous; under-parts mottled with pale reddish-white and brownish-black, the latter most conspicuous on the breast, the former on the abdomen and under tail-coverts; four middle feathers of the tail mottled with gray and brownish-black, the latter forming irregular bands; external feathers of

the tail brownish-black, widely tipped with silky white, and with traces of rufous bars towards the base; quills brownish-black, with interrupted bars of rufous; exposed ends of primaries same as the back. Female rather smaller than the male, with the white collar on the neck tinged with fulvous, which is also the color of the tips of the external tail-feathers.

DIMENSIONS. Total length, about $9\frac{1}{2}$ inches; wing, $6\frac{1}{2}$; tail, 5 inches.

HAB. Eastern North America. Western? Canada (Dr. Hall); Cuba (Mr. Lembeze); Florida (Bartram). Spec. in Mus. Acad., Philada.

OBS. This species is of common occurrence in the States on the Atlantic, and is universally known from its loud and often-repeated notes in the season of pairing and incubation. It is not recorded by our late naturalists and travellers to have been observed in the western regions of this continent, but the specimens described by Wagler as above were from Mexico, and were either this species, or a near relative. To *Caprimulgus macromystax* we shall more particularly allude under the head of obscure species of this family.

3. ANTROSTOMUS NUTTALLII. (Aud.) Nuttall's Whip-poor-will.

CAPRIMULGUS NUTTALLII. Aud., Orn. Biog., V. p. 335. (1839.)

Aud., B. of Am., Oct. ed., VII. pl. 495.

Small, aberrant; wing long; third quill longest; legs rather long; tail moderate; upper-parts brownish-black, mottled and spotted with ashy white and reddish fulvous; wing-coverts tipped with pearly ashy white; under-parts with transverse stripes of brownish-black and yellowish-white; under tail-coverts pale reddish fulvous; quills with alternate transverse bars of brownish-black and handsome reddish fulvous; middle feathers of the tail same colors as other upper parts; other tail feathers brownish-black, with irregular bars and lines of dark cinereous, and widely tipped with silky white; collar on the neck before silky white. Female similar, but with the colors paler, and the white of the throat and tail tinged with pale fulvous.

DIMENSIONS. Total length, about 7 inches; wing, $5\frac{1}{2}$; tail, $3\frac{1}{2}$ inches.

HAB. Western North America, Rocky Mountains (Audubon); Oregon (U. S. Ex. Exp. Vincennes); Washington Territory (Dr. Cooper); Texas (Mr. J. H. Clark). Spec. in Mus. Acad., Philada., and Nat. Mus., Washington.

OBS. This handsome species, which is the smallest of the birds of this family yet discovered in North America, appears to be a rather common bird in the countries above mentioned. It varies in some degree from the characters of the typical species, and with a small South American bird (*A. ocellatus*), may form a distinct group. Nothing is recorded of its habits.

II. GENUS CHORDEILES. SWAINSON, Fauna Boreali Americana, Birds, p. 496. (1831.)

Bill small and weak; gape very wide, without bristles; wing long, pointed, with the first and second quills longest; tail moderate or rather long, usually emarginate; legs short, weak; tarsus usually partly covered with short feathers; toes rather long, slender; claw of the middle toe pectinated. General form stout and heavy, broad. A genus containing about six species, inhabiting North and South America, the North American species of which are less nocturnal in their habits than those of the preceding genus.

1. *CHORDEILES VIRGINIANUS*. (Brisson.) The Night Hawk.

CAPRIMULGUS VIRGINIANUS. Briss., Orn., II. p. 477. (1760.)

CAPRIMULGUS POPETUE. Vieill., Ois. d'Am., Sept. 1, p. 56. (1807.)

CAPRIMULGUS AMERICANUS. Wilson, Am. Orn., V. p. 65. (1812.)

Edwards, Birds, II. pl. 63; Catesby, Carolina, II. Appendix, pl. 16; Vieill., Ois. d'Am., Sept. 1, pl. 24; Wilson, Am. Orn., V. pl. 40; Aud., B. of Am., pl. 147; Oct. ed., I. pl. 43; Nat. Hist. N. Y. Birds, pl. 27, fig. 60.

Bill short, weak; gape very wide; wing long, pointed; first and second quills longest, and nearly equal; tail emarginate; legs short; tarsus feathered below the joint, with the tibia; bare part covered with scales; middle toe long, partially united to the outer toe by a web, and with its claw distinctly pectinated. MALE.—Throat white; entire upper parts brownish black, every feather more or less mottled and spotted with ashy white and reddish fulvous, the former most conspicuous on the secondaries and wing-coverts, and the latter on the back; neck behind with an irregular collar of reddish; quills brownish-black, with a wide bar of white about their middle, forming a conspicuous transverse bar on the wing; tail feathers brownish-black, all, excepting the two central, with a wide subterminal transverse band of white, and with other irregular transverse narrow bands of ashy white; breast brownish-black, with rounded and irregular spots of ashy white and reddish fulvous; abdomen with transverse bars of ashy white and dark brown; under tail-coverts white. Female with the white stripe on the wing much narrower, and in some specimens confined to the inner-webs; white of the throat less pure, and tinged with reddish-yellow; general plumage paler, and more tinged with ashy and reddish fulvous.

DIMENSIONS.—Total length, 9 to 9½ inches; wing, 7½; tail, 4½ inches.

HAB. All of temperate North America, New Mexico (McCall); Oregon (Townsend); California (Heermann); Canada (Hall); Mexico (Rivoli collection); Nicaragua (Barrael); Cuba (Lembeye); Jamaica (Gosse). Spec. in Mus. Acad., Philada.

OBS. An abundant species everywhere in the United States.

2. *CHORDEILES SAPITI*. Bonaparte, Cons. Av., p. 63. (1849.)

Not figured.

Very similar in form and general appearance to the preceding, but smaller, and with all the colors paler; bill very short and weak; gape large; wing long; first quill slightly longest; tail moderate, emarginate; tarsus feathered in front somewhat below the point with the tibia; throat white; entire upper plumage brownish-black, mottled, and variegated, with very pale cinereous, which predominates on the back, rump, and coverts of the wings; under-parts with transverse narrow bands of dark brown and yellowish-white; quills brownish-black, with a wide transverse band of white at the distance from their end of about one-third their length, and also with some irregular spots and pairs of spots of rufous in their basal halves. Female paler, and with the white of the throat tinged with pale reddish fulvous.

DIMENSIONS. Total length, about 8½ inches; wing, 7½; tail, 4½ inches.

HAB. Texas (Mr. Clark, Capt. McCown); New Mexico, Central America. Spec. in Mus. Acad., Philada., and Nat. Mus., Washington.

OBS. This species is nearly allied to the preceding, and also to *Chordeiles brasiliensis*, from both of which it differs in some particulars of form, and also in having its colors much paler. In the latter character it somewhat resembles the *C. acutipennis* of South America. We regard this bird provisionally under the name above given, but the description as cited is too brief

to be satisfactory. It is, however, the only species known to us that can be referred to it.

This bird is abundant in Texas during the summer.

3. *CHORDEILES HENRYI. nobis* (new species, January, 1855).

Not figured.

Larger than either of the two preceding species; wing long; second quill longest; tail rather long; emarginate; legs and feet short; tarsus feathered in front slightly below the joint with the tibia; bare part of the tarsus and the toes with very distinct scales; entire upper parts variegated with dark brown and pale reddish fulvous, every feather being tipped and spotted with the latter, which predominates on the back, rump, wing-coverts, and tertiaries; some spots on the tertiaries rufous; breast dark brown, every feather tipped with dull reddish fulvous; abdomen white, tinged with pale reddish-yellow, every feather with transverse stripes of brownish-black; under-coverts dull reddish white, with transverse lines of brownish-black; neck with a large band of white in front; quills brownish-black, tipped with dull reddish-white; primaries with a wide transverse band of white at about half their length; tail with alternate irregular stripes of brownish-black and pale reddish fulvous, the latter mottled with black; under wing-coverts pale reddish-white, with bands and spots of brownish-black. FEMALE. Colors paler, and white of the neck obscure.

DIMENSIONS. Total length of skin, about 10 inches; wing, 8; tail, $4\frac{1}{2}$ inches.

HAB. New Mexico (Dr. Henry, Lieut. Gunnison). Spec. in Nat. Mus., Washington, and Mus. Acad., Philada.

OBS. This bird may be distinguished from other American species by its color, which is lighter and of a different style of variegation, the prevailing tone being a dull, pale reddish and yellowish, somewhat approaching what is called buff or drab color. It is larger than *Chordeiles virginianus*.

Specimens of this interesting species have been procured at Fort Webster, New Mexico, by Dr. Henry, and by the unfortunate party under command of the late Lieut. Gunnison.

As a token of respect for T. Charlton Henry, M. D., of the United States Army, whose exertions in the investigation of the natural productions of New Mexico, now continued for several years, and the formation of large collections in various departments, which attest his zeal and attachment to zoological science, we propose the specific name above given.

B.

OBSCURE OR LITTLE KNOWN SPECIES OF THIS FAMILY.

1. *CAPRIMULGUS MACROMYSTAX*. Wagler, Isis, XXIV. p. 533. (1831.)

This species is noticed by Wagler, as above, from a Mexican specimen, and his description is essentially a comparison with the *Caprimulgus europæus*. It is stated that the bristles at the base of the bill are very long, or "nearly as long as the head without the bill," and the plumage generally bearing a resemblance to the European species mentioned.

There is in the collection of the Philadelphia Academy, a specimen from Mexico, and another from California, differing in shade of color only from the *Antrostomus vociferus*, and from which the distinctive characters are too slight to establish a separate species. We regard these specimens as *C. macromystax*. The length of the bristles in Wagler's description applies as well to *A. vociferus*, and we think it probable that his name is a synonyme.

The following is a translation of Wagler's description or notice as above cited, and is at the end of an elaborate and valuable paper, in which he describes several new American species of birds:—

"At the conclusion of these descriptions of birds, I will yet remark that we have received from Mexico, also, a *Caprimulgus* (which specimen unfortunately is without the tail), that nearly resembles ours in size and color, but which nevertheless may be distinguished at a glance; the tarsi on their upper sides are hardly feathered to the middle, and the bristles on both sides of the upper mandible are uncommonly stiff, and longer than in any other American Night Swallow, nearly as long as the head without the bill, and are turned *rake-like* obliquely downwards. I have named it, therefore, *Caprimulgus macromystax*. The feet are short, as in ours; also as in ours, the claw of the middle toe on its inner border is pectinated, the primaries are small, the second, third, and fourth, externally from their middles to their ends, are strongly sinuated; they are brown-black, without white spots, but have internally and externally rust-red angular dots."

2. *CAPRIMULGUS MINOR*. Forster. Catalogue of the Animals of North America, p. 13. London, 1771.

A name given without being accompanied by a description, though probably applicable to *Antrostomus vociferus*, which was known to some of the older naturalists, and, previous to the introduction of the binomial nomenclature, was called *minor*, in distinction from the *Caprimulgus europæus*.

The catalogue by Forster above referred to is a pamphlet, and is, so far as we know, the first attempt at an enumeration of the species of all classes of animals inhabiting North America. There is also a catalogue of the Plants of North America by the same author.

3. *ANTROSTOMUS CALIFORNIANUS*. Bonaparte, Cons. Av. p. 61. (1849.)

The description by the Prince of Canino, as above, is as follows:—

"(Confer *Capr. nuttalli*, Aud. Am. Orn., 2d edit., t. 495,) ex California, Vix Turdi magnitudine. Mas. Griseus, nucha fulvescenti, abdomine cervino, nigro undulato; gula macula utrinque alba nigro terminata: remigibus fuscis, macula mediana alba, rectricibus lateralibus nigricantibus, extima late ad apicem candida."

The characters here given differ so essentially from those of any other species of *Antrostomus*, that we much suspect that the bird alluded to neither belongs to this genus, nor is an American species.

4. *CAPRIMULGUS EUROPEUS*. Linn.

This name occurs in several of the older authors on American Natural History, which is to be attributed to the fact that the *Whip-poor-will* (*Antrostomus vociferus*) was regarded by Linnæus as a variety only of the European Goatsucker. President Jefferson, in Notes on the State of Virginia, p. 117 (London edition, 1787), gives both of the then known North American birds of this group as two varieties only of the European bird. Professor Barton, in Fragments of the Natural History of Pennsylvania, p. 14, under the head of *Caprimulgus europæus*, says: "This, or a variety of it, is certainly a native of Pennsylvania. So that now all the fifteen species of this genus (mentioned by Gmelin) are known to be natives of America." Both of these distinguished and venerated fathers of American zoological science adopted the opinion of Linnæus, and the name of the European bird is given also on the same authority by some others of the earlier American writers.

The European Goatsucker has never been observed on the continent of America.

Professor Barton's observation above quoted is singularly suggestive. Linnæus, at the date of his last edition of the *Systema Naturæ*, knew *two* species only of the genus *Caprimulgus*. Gmelin, in the edition of the same work, edited by him, and published in 1788, extended the list to *fifteen* species, and was, when Professor Barton wrote, in 1799, recent and high authority. So greatly has the knowledge of species of birds been extended, that at this time (1855) there are at least ninety known birds of the family *Caprimulgidæ*, all of which would have been regarded by Linnæus and Gmelin as belonging to the genus *Caprimulgus*. There are seventy-four species of this family in the collection of the Philadelphia Academy. Though, as Professor Barton observes, all of those known to Gmelin (except *Caprimulgus europæus*), are American, others are now ascertained to inhabit all the temperate and tropical regions of both of the great divisions of the globe, and the whole of Australia.

Of this family of birds, the only species that have been ascertained or supposed by naturalists to inhabit that part of North America within our limits, are given in the preceding pages. The group is, however, represented in South America not only by other species of the genera above given, but by various other genera and species, amongst which are some curious and interesting forms. The genus *Steatornis*, containing a single species, first brought to notice by the celebrated Humboldt (*Steatornis caripensis*, Humboldt), is remarkable for its near approach to the Owls, and would, to a casual observer, scarcely be regarded as belonging to any other than that family. The genus *Nyctibius*, which is also South American, contains some species as large as the Crow of the United States, and which are amongst the largest birds of this group. Another genus, *Hydropsalis*, or the Scissors-tailed Goatsuckers, as they are termed by Azara (an enthusiastic and accurate Spanish writer on

South American Natural History), are remarkable for having tails of singular forms, and of great length in some species. *Hydropsalis torquatus* has the two outermost feathers of its tail long, and the two middle feathers also long, leaving the intermediate comparatively short. *Hydropsalis lyra*, Bonaparte, has the outermost feathers of the tail very long, and curved inwards at their ends. Two species, first described by us, *Hydropsalis limbatus* and *segmentatus* (in Proc. Acad., Philadelphia), have that appendage several times the length of their bodies.

About thirty-five species of *Caprimulgidæ* inhabit South and Central America and Mexico. The largest birds of this group are natives of Australia.

We are inclined to the opinion that this family (and the Swallows also) properly belong to the circle of rapacious birds in which they have been arranged by Prof. Reichenbach, in *Avium Systema Naturale* (Dresden and Leipsic, 1850).*

II. FAMILY HIRUNDINIDÆ. THE SWALLOWS.

Plumage compact; size generally small; bill small, much depressed, very wide at base, and suddenly compressed to the tip, giving it a somewhat triangular shape; wings long; tail various, frequently forked; legs and feet short and weak.

These birds form a peculiar and easily-recognized family, species of which inhabit all parts of the world, and in civilized countries are generally regarded with favor. The Swallows are eminently social and gregarious, being almost constantly seen in companies even in the breeding season, and are amongst the comparatively few birds whose numbers are not diminished by the progress of the settlement and cultivation of countries. They subsist exclusively on insects captured on the wing, in the pursuit of which they exhibit extraordinary powers of flight.

A.

1. GENUS *HIRUNDO*. Linn., Syst. Nat. I. p. 343. (1766.)

Bill depressed, wide at base, compressed to the end, nostrils basal; wing long, pointed, first primary usually longest, secondaries short; legs and feet short and weak; tail moderate, forked or emarginate. General form rather broad, robust; flight protracted, rapid.

* The works of this naturalist (who is Director of the Zoological Museum in Dresden) are in the highest degree important, and in fact indispensable to the ornithologist. In his great work, "The Complete Natural History" (*Die Vollständigste Naturgeschichte*, Dresden and Leipsic, now in the course of publication in parts), he has undertaken to give plates of all known species of birds, and has already published several thousand figures.

1. SUB-GENUS *HIRUNDO*.

Tail with the two external feathers disproportionately long; others graduated.

1. *HIRUNDO RUFA*. Gmelin, Syst. Nat. I. p. 1018. (1788.) The Barn Swallow.

HIRUNDO HORREORUM. Barton, Frag. Nat. Hist. of Penna. p. 17. (1799.)

HIRUNDO AMERICANA. Wilson, Am. Orn. V. p. 34. (1812.)

HIRUNDO ERYTHROGASTER. Boddaert, Tab. Pl. Enl. p. 45. (1783.)?

HIRUNDO CYANOPYRRHA. Vieill., Nouv. Dict. XIV. p. 510. (1817.)

"*HIRUNDO RUSTICA*. Linn." Aud. Orn. Biog. II. p. 413.

Wilson, Am. Orn. V. pl. 38, fig. 1, 2; Aud., B. of Am. pl. 173, Oct. ed. I. pl. 48; Nat. Hist. N. Y. Birds, pl. 29, fig. 64; Buff., Pl. Enl. 724, fig. 1?

Wings long; tail deeply forked with the two outer feathers much the longest; forehead, throat, and neck in front, chestnut, which color is separated from the paler color of the breast by a partial or rarely perfect collar of dark steel blue; entire upper parts steel blue, with a purple lustre, inclining to green on the wings and tail; breast, abdomen, and under tail coverts, chestnut, very pale in some specimens, but generally darker on the tail coverts; tail with a large spot of white on the inner web of every feather, except the middle two; bill and feet black; sexes very nearly alike.

DIMENSIONS. Total length, 7 inches; wing, $4\frac{1}{2}$; tail, $3\frac{1}{2}$. Female smaller.

HAB. Throughout North America. Canada (Dr. Hall); Oregon (Dr. Townsend); Texas (Dr. Woodhouse); Santa Fé (Col. McCall); Indiana (Dr. Haymond); Long Island (Mr. Giraud); Cuba (Mr. Lembeys).

This is one of the most abundant of the birds of the United States, and known to all classes and ages of the population. It is nearly related to the European House Swallow (*Hirundo rustica*), but can readily be distinguished on comparison. The European is rather the larger, the under-parts are darker, and the collar on the neck in front complete. In the present bird this collar is imperfect, with very rare exceptions.

2. SUB-GENUS *PETROCHELIDON*.

Tail moderate or short, emarginate, but slightly forked.

2. *HIRUNDO LUNIFRONS*. Say., Long's Exp. to the Rocky Mts. II. p. 47. (1823.) The Cliff Swallow.

HIRUNDO OPIFEX. Clinton, Ann. N. Y. Lyceum I. p. 161. (1824.)

HIRUNDO RESPUBLICANA. Aud., Ann. N. Y. Lyc., I. p. 164. (1824.)

"*HIRUNDO FULVA*. Vieill." Aud., Orn. Biog. V. p. 415, and Clinton, as above.

Bonap., Am. Orn., I. pl. 7, fig. 1; Aud., B. of Am., pl. 68, Oct. ed. I. pl. 47; Nat. Hist. N. Y. Birds, pl. 30, fig. 64.

Bill very wide at base, short; wings long; tail rather short, emarginate; forehead white, nearly pure in some specimens, but generally tinged with reddish chestnut; head above and back bluish-black, with a purple lustre; plumage of the back usually edged and streaked with grayish white; rump pale chestnut; throat dark brownish chestnut, which color extends upwards and forms a complete collar around the neck behind; lores and large spot on the neck in front black; entire other under-parts ashy-white, tinged with pale chestnut, especially on the breast; under tail coverts with a green lustre, and tipped with pure white; wings and tail brownish-black; bill and feet dark; sexes very nearly alike.

DIMENSIONS. Total length, $5\frac{1}{2}$ inches; wing, $4\frac{3}{8}$; tail, 2 inches. Female rather smaller.

HAB. Throughout North America. Oregon (Dr. Townsend); California (Dr. Heermann); New Mexico (Col. McCall); Texas (Dr. Woodhouse); Indiana (Rufus Haymond, M.D.); Canada (Dr. Hall).

This handsome species is now well known throughout almost the whole of the United States, but is said to have appeared for the first time in the States on the Atlantic seaboard within the memory of persons now living. It builds a curiously-formed nest of the shape of a gourd, faithfully represented in Mr. Audubon's plates, cited above.

Hirundo fulva, Vieill., is an allied species, but much smaller, and not ascertained to inhabit any part of North America. It is best known as a bird of the Island of Jamaica.

The paper referred to above, in which this bird is named *Hirundo opifex*, possesses additional interest, from the fact that it was written by the late De Witt Clinton, formerly Governor of the State of New York, who had given particular attention to American Natural History.

3. *HIRUNDO BICOLOR*. Vieill., Ois. d'Am., Sept. 1, p. 61. (1807.) The White-bellied Swallow.

HIRUNDO VIRIDIS. Wilson, Am. Orn. V. p. 44. (1812.)

HIRUNDO LEUCOGASTER. Stephens, Gen. Zool. X. p. 106. (1817.)

Vieill., Ois. d'Am., Sept. 1, pl. 31; Wilson, Am. Orn. V. pl. 38, fig. 3; Aud., Birds of Am., pl. 98, Oct. ed. I. pl. 46; Nat. Hist. N. Y. Birds, pl. 29, fig. 1.

Wings long, exceeding the tail, pointed; tail deeply emarginate; entire upper parts uniform dark green, changing to blue in some lights, very glossy; wings and tail brownish-black, slightly tinged with green; entire under-parts silky-white, generally with a tinge of cinereous; bill black; feet yellow; sexes alike, but the female with the colors duller.

DIMENSIONS. Total length, male, $5\frac{1}{2}$ inches; wing, $4\frac{3}{8}$; tail, $2\frac{1}{4}$ inches.

HAB. Throughout North America. Canada (Dr. Hall); Oregon (Dr. Townsend); California, Texas (Dr. Woodhouse); Cuba (Mr. Lembeyle); Wisconsin (Dr. Hoy); Northern Ohio (Prof. Kirtland); Long Island (Mr. Giraud).

When in full plumage, this is one of the handsomest of the Swallows of the United States. It is quite abundant everywhere in the States on the Atlantic during the summer.

Specimens from California present some points of difference from the bird

of Pennsylvania, being apparently more tinged with blue, and having the bill perhaps slightly large. We regard the two, however, as specifically the same.

4. *HIRUNDO THALASSINA*. Swains., Philos. Mag., 1827, p. 366.

Aud., B. of Am., pl. 385, fig. 4, 5, Oct. ed. I. pl. 49.

Wings long, exceeding the tail, which is rather short and emarginate; entire upper-parts rich grass-green, very glossy, and shaded with purple, especially on the head, and in some specimens approaching to carmine on the back, rump, and upper tail-coverts; entire under-parts silky-white, generally with a tinge of cinereous; bill and feet dark. Female, less glossy, and with the purple generally tinged with brown.

DIMENSIONS. Total length, male, 5 inches; wing, $4\frac{1}{2}$; tail, 2 inches. Female, smaller.

HAB. Western North America. Oregon (Townsend); California (Gambel); Mexico (Swainson); New Mexico (Woodhouse).

This is the most beautiful of the North American birds of this family. It is exclusively an inhabitant of the countries west of the Rocky Mountains and of Mexico.

II. GENUS PROGNE. BORE, Isis, 1826, p. 971.

Form robust and compact; bill wide at base, compressed suddenly to the tip, rather strong; upper mandible overlapping the under; wings long, pointed; first and second primaries longest; tail moderate, rather wide, usually deeply emarginate; tarsi and feet larger and stronger than usual in this family.

Size, largest of American birds of this family. This genus contains about five or six American species, several of which are nearly related to each other, and not well understood, and probably one other (*Hirundo borbonica*, Gm.), which is a native of Madagascar, and of the Island of Bourbon. All the species, except the last, considerably resemble each other, and are difficult to distinguish in some stages of plumage.

1. *PROGNE PURPUREA*. (Linn.) The Purple Martin. The House Martin.

HIRUNDO PURPUREA ET SUBIS. Linn., Syst. Nat. I. p. 344. (1766.)

HIRUNDO VIOLACEA. Gm., Syst. Nat. I. p. 1026. (1788.)

HIRUNDO CÆRULEA. Vieill., Ois. d'Am., Sept. 1, pl. 57. (1807.)

HIRUNDO VERSICOLOR. Vieill., Nouv. Dict. XIV. p. 509. (1817.)

HIRUNDO LUDOVICIANA. Cuv., Reg. An. I. p. 374. (1817.)

Catesby, Carolina I. pl. 51; Vieill., Ois. d'Am., Sept. 1, pl. 26, 27; Buff., Pl. Enl. 722; Wilson, Am. Orn. V. pl. 39, fig. 2, 3; Aud., B. of Am., pl. 22, Oct. ed. I. pl. 45; Nat. Hist. N. Y. Birds, pl. 28, fig. 61.

Bill moderately wide at base, rather strong, curved; wings reaching about to the end of the tail, which is deeply emarginate; legs short; toes rather long. MALE.—Entire plumage above and below deep black, with a purple and blue silky lustre; quills and tail

less lustrous, and in many specimens plain brownish-black; bill and feet black. FEMALE. Upper-parts same as in the male, but paler; under-parts ashy-brown, dark on the throat and breast; paler and sometimes nearly white on the abdomen; under tail coverts dark brown, every feather edged with ashy-white.

DIMENSIONS. Total length, male, $7\frac{1}{2}$ inches; wing, $5\frac{3}{4}$; tail, 3 inches. Female slightly smaller.

HAB. Eastern North America. Canada (Dr. Hall); Oregon (Dr. Townsend); Texas (Dr. Woodhouse); Cuba (Mr. Lembeye); Florida (Mr. John Lee Williams).

In mature plumage, a beautiful species. This bird is common throughout the eastern United States, and comes with much punctuality in the spring to take possession of the boxes prepared for its accommodation in the rural districts, and occasionally in the cities. Our esteemed friend, Mr. Thomas Fisher, an eminent mathematician of this city, has been annually visited by a colony of this species for several years, though his residence is in one of the most dense parts of Philadelphia.

This bird is nearly allied to several species of South America and the West Indies. In fact, the genus *Progne* is one of the most difficult of the family of Swallows.

2. PROGNE CHALYBEA. (Gmelin.) The Western Martin.

HIRUNDO CHALYBEA. Gm., Syst. Nat. I. p. 1026. (1788.)

Buff., Pl. Enl. 545, fig. 2.

Size smaller than that of the preceding; bill very wide at base, much longer than in the preceding, gradually compressed to the tip, curved; wings reaching about to the end of the tail, which is deeply emarginate; under tail coverts long; legs short. MALE, ADULT? Plumage of the upper parts dusky black, with a dark green lustre; throat and breast ashy white, running into light smoky brown on the sides of the neck, breast, and flanks; abdomen and under tail-coverts pure white, many feathers having dark lines on their shafts; under wing-coverts and axillaries fuliginous brown. FEMALE? Similar to the male, but less lustrous on the upper parts, and with the entire plumage more tinged with fuliginous; under tail-coverts pure white, many feathers with dark shafts; bill and feet dark.

DIMENSIONS. Total length, about $6\frac{3}{4}$ inches; wing, $5\frac{1}{4}$; tail, 3 inches. Female slightly smaller.

HAB. Western North America. South America, California, Panama (Mr. Bell).

This species, long known as a bird of South America, was first ascertained to be entitled to a place in the ornithological fauna of the United States by Mr. John G. Bell, of New York, who noticed it in California, and previously at Panama. We have since seen specimens from various parts of California, and suspect that it is abundant in that and probably in other countries of Western America.

Though closely related to other South American species, the present bird may be distinguished very easily from the Purple Martin of the United States (*P. purpurea*), by the greater width and much greater length of the bill, and it is smaller in size. We are not confident that we have ever seen the perfectly plumaged adults of this bird, though the specimens above described

were obtained by Mr. Bell in the spring, and have the general appearance of maturity, except that the lustre of the plumage is but faint. Little or nothing is known of its habits or history.

III. GENUS COTYLE. BOIE, *Isis*, 1822, p. 350.

Bill small, weak, wide at base, compressed to the tip; wing long, pointed, first and second quills longest; secondaries short, truncate, and emarginate; tail moderate, wide, even or slightly emarginate; legs short, slender; toes rather long, slender; colors dull, usually fuliginous brown of various shades; size of American species smaller than those of either of the preceding genera.

This genus contains about twelve species, inhabiting various regions of both continents, and all, so far as known, more or less terrestrial in their habits. In addition to those about to be described, there are three other American species restricted to the southern division of this continent.

1. COTYLE RIPARIA. (Linn.) The Bank Swallow. The Sand Martin.

HIRUNDO RIPARIA. Linn., *Syst. Nat.* I. p. 344. (1766.)

HIRUNDO CINEREA. Vieill., *Nouv. Dict.* XIV. p. 526.

Wilson, *Am. Orn.* V. pl. 38, fig. 4; Aud., *B. of Am.*, pl. 385, Oct. ed. I. pl. 50; *Nat. Hist. N. Y. Birds*, pl. 28, fig. 62.

Bill weak; wing long; first primary longest; tail emarginate; legs short; tarsus with a tuft of short downy feathers near the insertion of the hind toe; entire upper parts and wide band across the breast light fuliginous or grayish brown; quills and tail brownish black; throat, abdomen and under tail coverts white; under wing coverts light fuliginous; bill and feet dark.

DIMENSIONS. Total length, 5 inches; wing, 4; tail, 2 inches. Female slightly smaller.

HAB. The whole of North America. Oregon (Dr. Townsend); California (Mr. Bell); Indiana (Dr. Haymond); Cuba (Mr. Lembeye); Indian Territory, New Mexico (Dr. Woodhouse); Florida (Mr. William Bartram).

Frequently met with, and remarkable for constructing its nest in a hole in the ground, usually by the side of a quarry or stream of water. This is one of the few American birds that appear to be absolutely identical with European species. On close comparison, we can discover no characters in the present sufficient to raise a probability of specific distinction.

Specimens from California, that we have examined, present slight variations from those of the Eastern States. The bill appears to be smaller, and the tail not so deeply emarginated.

2. COTYLE SERRIPENNIS. (Audubon.) The Rough-winged Swallow.

HIRUNDO SERRIPENNIS. Aud., *Orn.* IV. p. 593. (1838.)

Aud., *B. of Am.*, Oct. ed. I. pl. 51.

Larger than the preceding; wing long; first primary longest; tail emarginate; legs short; outer edge of the first primary furnished throughout its length with a row of reversed hooked bristles, easily apparent to the touch; entire upper parts light ashy white, darker on the breast and flanks, lighter on the throat and middle of the abdomen;

under-coverts of the tail white; under-coverts of the wing ashy brown; bill and feet dark. Female lighter in all the colors.

DIMENSIONS. Total length, male, $5\frac{1}{2}$ inches; wing, $4\frac{1}{2}$; tail, $2\frac{1}{4}$ inches. Female slightly smaller.

HAB. Louisiana, South Carolina (Mr. Audubon); Pennsylvania (Prof. Baird); California (Dr. Heermann).

This remarkable species is easily distinguished from any other North American Swallow by the recurved and stiff bristles of the outer edges of the first primary quills. There is a South American species which has, however, the same character (*Cotyle flavigaster*).

The present bird considerably resembles that immediately preceding, but is larger, and is quite distinct. It was regarded as a rare southern species, until demonstrated by Professor Spencer F. Baird, then of Dickinson College, Carlisle, Pennsylvania, to be of frequent occurrence in the interior of that State. Dr. Heermann states that it is not uncommon in California. Ornithologists generally, however, have not noticed it, and in the vicinity of Philadelphia, it has been entirely overlooked, or does not inhabit this district.

II. SUB-FAMILY CYPSELINÆ. THE SWIFTS.

Bill less flattened than in the preceding sub-family, very wide at base, short, curved; wings very long, somewhat falcate, flattened; tail short; legs and toes short, strong; claws strong; general form adapted to very swift and vigorous flight, and the capture of insects on the wing.

I. GENUS CYPSELUS. ILLIGER, Prodrömus, p. 229. (1811.)

APUS. SCOPOLI. MICROPUS. WOLF.

Bill wide at base, curved; nostrils basal, with large membrane; wings very long; pointed shafts of the primaries strong and rigid; first and second primaries longest; secondaries short; tail moderate, with the shafts of its feathers strong and rigid; legs short, strong; tarsus usually feathered; toes short, strong; claws strong, curved, and sharp; hind toe very short, reversible; general form robust; head broad.

This genus includes about twenty species, which are inhabitants of the countries of the old world, except six American and one Australian species. They are remarkable for great swiftness of flight, and live habitually in the crevices of rocks, in caverns, or in hollow trees. The bird now about to be described is the only species of this genus yet observed within the limits of the United States, the others of this continent being confined to South America.

1. CYPSELUS MELANOLEUCUS. Baird, Proc. Acad., Phila., VII. p. 118. (1854.)

Not figured.

Wings very long, exceeding the tail; second primary longest; first primary tapering towards the end; secondaries short, obliquely incised at their ends; tail moderate, emar-

ginate; shafts of the tail-feathers very stiff at their bases; tarsi and toes feathered, short, and very strong; entire plumage above dark fuliginous, paler on the head, nearly black on the back and rump; throat, breast, wide longitudinal stripe down the middle of the abdomen, and large spot on the flank, pure white; sides and under-coverts of the tail dark fuliginous, which is also the color of the plumage of the tibiae, tarsi, and toes; wings and tail dark fuliginous; secondaries tipped with white; wings at the shoulders edged with white; under-wing-coverts ashy fuliginous; claws light-colored.

DIMENSIONS. Total length of skin, from tip of bill to end of tail, about $5\frac{1}{2}$ inches; wing, $5\frac{1}{2}$; tail, $2\frac{1}{2}$ inches. Female very nearly the same.

HAB. New Mexico (Dr. Kennerly, Dr. Heermann).

Only noticed, as yet, by the two naturalists just mentioned. This is a handsome bird, and an interesting addition to the ornithology of the United States, being the first species of the genus *Cypselus* discovered within our limits. According to the gentlemen above mentioned, this bird habitually frequents the crevices in rocks, in which it builds its nest and rears its young. Its flight is represented to be exceedingly rapid and long-continued.

This bird is evidently of the same group of species as *Cypselus montivagus*, D'Orbigny, Voyage dans L'Amerique Meridionale, Ois., p. 357, pl. 42, fig. 1 (Paris, 1844), which inhabits the mountains of Bolivia. The white stripe down the middle of the abdomen distinguishes the present bird.

II. GENUS ACANTHYLIS. BOIE, Isis, 1826, p. 971.

CHÆTURA. STEPHENS. HIRUNDAPUS. HODGSON.

General characters similar to the last genus, but with the shafts of the tail-feathers prolonged beyond the webs, and forming strong thorn-like points; tarsi and toes naked; bill small, curved, wide at base; wings long; tail usually short; legs short, rather slender; claws curved, strong; general form plump and robust. Of this genus there are about fifteen species, two only of which are known to inhabit the United States, though several are natives of South America. Like the birds of the preceding genus, they possess great rapidity of flight, and live in similar situations.

1. ACANTHYLIS PELASGIA. (Linn.) The Chimney Bird. The American Swift.

HIRUNDO PELASGIA. Linn., Syst. Nat. I. p. 345. (1766.)

HIRUNDO CERDO. Bartram, Trav., p. 292. (1791.) Barton, Frag., p. 18.

"CYPSELUS ACUTUS. Temm., Mus. Lugd." Bonap., Cons. Av., p. 64.

Vieill., Ois. d'Am., Sept. 1, pl. 33; Wilson, Am. Orn., V. pl. 39, fig. 1; Aud., B. of Am., pl. 58, Oct. ed., I. pl. 44; Nat. Hist. N. Y. Birds, pl. 27, fig. 58.

Wings very long, extending beyond the tail, flattened, somewhat falcate; shafts of primaries rigid; tail short; exserted spines sharp, elastic; tarsi and toes naked; entire plumage above and below fuliginous brown, darkest on the upper parts, and with a slight greenish lustre on the head and back (in mature specimens), much paler on the throat and

neck before; quills dark fuliginous; tail lighter; spot in front of the eye black, a very narrow superciliary line ashy-white; shafts and spines of the tail-feathers black; bill and feet dark.

DIMENSIONS. Total length, male, from tip of bill to end of tail, $4\frac{3}{4}$ to 5 inches; wing, $5\frac{1}{4}$; tail, $1\frac{3}{4}$ inches. Female very nearly the same.

HAB. Throughout North America. Canada (Dr. Hall); Florida (Mr. Williams); Indiana (Dr. Haymond); Indian Territory, Texas, New Mexico, California (Dr. Woodhouse).

The Chimney bird is abundant in all the States on the Atlantic, and, according to Dr. Woodhouse, equally so in Texas. It possesses powers of sustaining protracted and rapid flight, perhaps not equalled by any other bird of North America, though characteristic in some measure of all the birds of this family. In Europe, birds of genera nearly allied to the present have received the name of "Swifts" from this fact.

2. ACANTHYLIS VAUXII. (Townsend.) Vaux's Swift.

CYPSELUS VAUXII. Towns., Jour. Acad., Philada., VIII. p. 148. (1839.)

Not figured.

Smaller than the preceding, but very similar to it in form and general appearance; wings very long, exceeding the tail, which is short; exerted spines of the tail-feathers sharp, slender, and not so rigid as in the preceding species; tarsi and toes rather slender, naked; plumage above fuliginous brown, lighter on the rump and upper tail-coverts, darker, and tinged with greenish on the head and back; quills dark fuliginous, with a greenish lustre; tail lighter fuliginous; under-parts pale fuliginous, nearly white on the throat, darkest on the abdomen; shafts and spines of the tail-feathers black; bill and feet dark.

DIMENSIONS. Total length of skin, sex unknown, $4\frac{1}{4}$ inches; wing, $4\frac{1}{2}$; tail, $1\frac{1}{2}$ inches.

HAB. Columbia River, Oregon (Dr. Townsend).

This species, though apparently totally distinct from the common Chimney bird of the United States, has never been noticed since its discovery by Dr. Townsend. It is probably a bird exclusively inhabiting the countries west of the Rocky Mountains. The original specimen brought by Dr. Townsend remains unique in the collection of the Philadelphia Academy.

The name of this species was given in honor of Mr. William S. Vaux, of this city, and is a just compliment to one of the most active and valuable members of the Academy.

B.

OBSCURE AND DOUBTFUL SPECIES OF THIS FAMILY.

1. HIRUNDO UNALASCHKENSIS. Gm., Syst. Nat. I. p. 1025. (1788.)

HIRUNDO AOONALASCHKENSIS. Lath., Ind. Orn., II. p. 577. (1790.)

Originally described by Latham from a specimen in the Leverian Museum, as follows:—

"Length four inches and a half; bill very short, dusky; the plumage above dull black, without gloss; beneath and sides of the head dusky ash color, the last darkest; rump dirty white; tail forked, each feather round at the end; legs dusky. Inhabits Aoonalashka." Gm., Syn. II. p. 571.

This species is unknown to ornithologists of the present day, and from the above description and the evident similarity of the bird to other small species of this family, would not be recognized without difficulty, unless obtained in the locality as given. It appears to belong to the genus *Collocalia*, Gray, a very remarkable group of small Swallows, that inhabit caves, and are found in several islands in the Pacific Ocean. A species of this genus is the Esculent Swallow of authors (*Collocalia esculenta*), the nests of which are so highly esteemed as an article of food by the Chinese, and are the principal constituent in the somewhat celebrated "Bird's-nest soup," a prominent feature in Chinese entertainments. It is probable, too, that the nests of other species of these birds are used for the same purpose.

No species of the genus alluded to has been discovered on the continent of America, nor in either of the American islands, except the above.

2. *HIRUNDO PHENICEPHALA*. Rafinesque, Annals of Nature, p. 4. (Lexington, Kentucky, 1820.)

"Head scarlet; back grey; belly white; bill and feet black. A fine and rare Swallow, seen only once by Mr. Audubon, near Hendersonville, in Kentucky; it must have been a wanderer, and is probably a native of Louisiana or Mexico."

"Head scarlet"—enough said; Professor Rafinesque brings our ornithological ideas to a stand immediately. We never heard of a Swallow with the head of that color, exactly. But as Mr. Audubon's name is brought in as authority, we think it possible that the bird alluded to in this description may have been a straggling specimen of a South American species, which has the head of a rufous color (*Cortyle fucata*, Temm., Pl. Col. 161, fig. 1). Rafinesque apparently gave his description and name without ever having seen the bird, or made further inquiry, and probably misunderstood or partly forgot the statement of Mr. Audubon respecting the color of the head.

Several instances of South American birds having been captured in the United States have come to our knowledge. We ought to have said, though, previously, that many more South American birds inhabit Mexico than are recorded in the books. Several specimens of *Crotophaga sulcirostra* have come under our notice, the last one of which was shot on an island in the Delaware, opposite to the northern portion of this city. Its plumage was perfectly mature and uninjured, showing evidently that it had never been caged.

3. *ACANTHYLIS SAXATILIS*. Woodhouse, Sitgreave's Report of an Expedition down the Zuni and Colorado Rivers, Zoology, p. 64 (Washington, 1853).

"Head and rump white; back, tail, wings, and side, black; beneath white; upper tail-coverts black; under tail-coverts white. About the size of *A. pelagica*, and in its mode of flight the same."

"This beautiful Swift I saw whilst encamped at Inscription Rock, New Mexico. Being on the top of this high rock at the time without my gun, I was unable to procure specimens. I had a fair view of the birds at this time, as they flew close to me. I descended immediately and procured my gun, but the birds by this time flew too high for me to be able to procure a shot at them. They were breeding in the crevices of the rocks. I was still in hopes of seeing them again along our route, but I had not that pleasure, it being the only place that I have observed them."

This bird has not been noticed since the publication of the above description by Dr. Woodhouse.

4. *HIRUNDO CINEREA*. "The Ash-bellied Swallow." Ord, in Guthrie's Geography, II. p. 317. (1815.)

This name occurs, without a description, in Mr. Ord's Catalogue of the Birds of North America, in Guthrie's Geography, as above.

Hirundo cinerea, Gmelin, is a native of Tahiti and of the Marquesas Islands, but has not to our knowledge ever been detected on the continent of North America. It belongs to the genus *Collocalia*, Gray. The Bank Swallow (*Cotyle riparia*) also was named *Hirundo cinerea* by Vieillot, but is given in Mr. Ord's list as distinct from the present.

5. *HIRUNDO RUPESTRIS*. "The Rock Swallow." Ord, in Guthrie's Geog., II. p. 317. (1815.)

This name also occurs in Mr. Ord's Catalogue, cited above. *Hirundo rupestris*, Scopoli, inhabits Europe and Asia, but we have never been informed of its appearance in America. It is a *Cotyle*.

We have now given all the species of Swallows known or supposed to inhabit the continent of America, north of Mexico.

As stated in a preceding page, Swallows are found in all countries except the Arctic regions, and are, so far as known to naturalists, birds of very considerable similarity of habits and of general characters. The various groups usually regarded as sub-families and genera are perhaps as easily distinguished in this family as in any other of the entire class of Birds, and it is one in which it is remarkable that almost every country produces species which belong to the genus (*Hirundo*) which is the type and apparently primary form of the family, besides forms peculiarly its own.

The types of great groups apparently more pre-eminently characterize the ornithology of Europe than that of any other division of the globe. In other words, Europe appears to produce the greatest number of species of birds exhibiting the fullest development of the especial characters of the groups to which they belong. It is very remarkable, too, that species are found almost throughout the world slightly aberrating, as it were, from European forms, or as though a typical form was produced with a greater or less degree of imperfection. Of this description of birds, the various species nearly allied to the House Swallow of Europe (*Hirundo rustica*), are a striking illustration. The American *Hirundo rufa*, and several Asiatic and African species, are only distinguished from that bird by characters of inferior value in specific identification. Australia, too, produces species, which, though apparently farther removed, are still similar. There are many other European birds which appear to occupy the same relative positions. The Goatsucker, Raven, Crow, Jay, and Peregrine Falcon, are instances. Of the European Conisostrial birds, nearly every species has nearly allied forms in other regions.

In connection, however, with this subject, there are two considerations by no means to be lost sight of: Firstly, the extent to which the entire science of ornithology may be regarded as having been derived from European birds; those having been studied, and ornithological science being in some measure an induction from them by the fathers and founders of this branch of Zoology. Secondly, whether in reality the production of the higher developments in birds is not peculiar to the western portions of the two great hemispheres, at least in the northern regions of these divisions of the globe. We regard it as evidently the case in the Old World, and not less so in America. That the ornithology of western North America produces the highest developments of forms in this class of animals that are to be found on this continent, we think fully demonstrable. But at present we regard it as true that Europe produces marked ornithological types of divisions strictly natural.

There are about one hundred known species of Swallows, of which eighty-five are in the collection of the Philadelphia Academy. The South American birds of this family, for the greater part, belong to genera represented in North America. Of the genus *Progne* there are several species peculiar to that portion of this continent, several of which possess habits and manners very similar to those of the Purple Martin. The same may be said of several species of *Acanthyis*, two or three of which considerably resemble our Chimney Bird. Of the Bank Swallows (*Cotyle*), there are also several South American species.

III. SUB-FAMILY HALCYONIDÆ. THE KING-FISHERS.

General form short, thick, and robust; bill usually long, sharp, and adapted to striking and seizing their prey, which, in the greater part of the

species, consists of fishes; wings generally long, and adapted to quick though not long-continued flight; tail usually short; legs short, frequently very strong; toes long, frequently partially joined together and flattened on the soles.

Of this extensive family, species are distributed throughout all the temperate and tropical regions of the world, though much more abundant in the latter. Many species habitually frequent the vicinity of the water, and subsist on fishes and small aquatic animals of other classes, but there are birds of this family that are found in the recesses of forests and other comparatively dry localities.

Two species only of King-Fishers have as yet been discovered in the United States.

I. GENUS CERYLE. BOIE, *Isis*, 1828, p. 312.

Form stout and strong; head large; bill long, straight, wide at base, and suddenly compressed to the point, which is sharp; aperture of the nostrils large; wings long; second and third quills usually longest; tail rather short, wide; legs short; tarsi very short; toes moderate, united at their bases, flattened and padded beneath.

The two species which inhabit North America within the limits of the United States belong to this genus, and it contains also various others of different parts of the world. They are, however, most numerous in South and Central America and Mexico.

1. CERYLE ALCYON. (Linn.) The Belted King-Fisher.

ALCEDO ALCYON. Linn., *Syst. Nat.*, I. p. 180. (1766.)

ISPIDA LUDOVICIANA. Gm., *Syst. Nat.*, I. p. 452. (1788.)

ALCEDO JAGUACATI. Dumont, *Dict. Sci. Nat.*, I. p. 455. (1816.)

ALCEDO GUACU. Vieill., *Nouv. Dict.*, XIX. p. 406?

Buffon, *Pl. Enl.*, 593, 715; Catesby's *Carolina*, I. pl. 69; Wilson, *Am. Orn.*, III. pl. 23, fig. 1; Aud., *B. of Am.*, pl. 77, Oct. ed. IV. pl. 255.

Form robust; head large, with the feathers of the crown and occiput lengthened, crest-like and erectile; wings long; second quill longest; tail moderate; tarsus very short; tibia longer; entire upper-parts, cheeks, and a wide transverse band or belt on the breast, light ashy-blue, generally with minute white spots on the wing-coverts and secondaries; throat and abdomen, and a small spot before the eye, white; flanks, and frequently the sides, ashy-blue, with white spots; quills black, more or less marked with white on their inner webs; secondaries widely edged on their outer webs with ashy-blue, uniform with other upper parts, and tipped narrowly with white; tail bluish-black, outer feathers edged externally with light ashy-blue, and middle feathers almost entirely of that color, and all having about ten to twelve narrow transverse bands of white, and narrowly tipped with white; under wing-coverts white. Younger, with the pectoral band light reddish chestnut, and frequently with a second and sometimes with a third band across the abdomen, and the sides and flanks of the same color; bill and feet dark. Sexes alike? Specimens occur with the wide pectoral band in all stages of change, from the light red to light ashy-blue.

DIMENSIONS. Total length, male, about 12 inches; wing, $6\frac{1}{4}$; tail, $3\frac{1}{2}$ inches.

HAB. Throughout North America. Oregon (Dr. Townsend); California (Dr. Heermann); Texas (Dr. Woodhouse); Canada (Dr. Hall); Florida (Mr. Williams).

Frequently met with in all parts of the United States, frequenting streams of water. It is a sprightly and handsome bird, and was until recently considered as the only North American species of the extensive family of King-Fishers. That honor must now, however, be partially shared with the succeeding.

2. CERYLE AMERICANA. (Gmelin.) The Texan Green King-Fisher.

ALCEDO AMERICANA. Gm., Syst., I. p. 451. (1788.)

ALCEDO VIRIDIS. Vieill., Nouv. Dict., XIX. p. 413. (1818)?

Buff., Pl. Enl. 591.

Much smaller than the preceding; bill straight; wing rather long, third quill longest; tail moderate; tarsus very short; legs rather slender; two outer toes united at base; entire plumage above dark shining green, darker and generally tinged with brownish on the head, and with numerous very small spots or points of white on the forehead; quills brownish-black, edged with green on their outer-webs; secondaries white at their bases, and all the quills with white spots on their outer-webs, regularly disposed, and forming three transverse bands on the wing; outer feathers of the tail white, irregularly marked on both webs with green; middle feathers green; breast bright reddish chestnut, forming a wide transverse band; throat, and ring around the back of the neck and abdomen, white; sides, flanks and under tail-coverts spotted with green; inferior wing-coverts white, with green spots; bill dark; feet lighter. Younger or female? Like the preceding, but with the pectoral band green, uniform with the color of the upper parts; white of the throat tinged with dull yellow.

DIMENSIONS. Total length of skin, $7\frac{1}{4}$ inches; wing, $3\frac{1}{4}$; tail, $2\frac{1}{2}$ inches..

HAB. Texas, Rio Grande (Capt. McCown, Mr. Clarke); Mexico (Lieut. Couch); South America.

This handsome little King-Fisher, though well known as a bird of South America, has, within the limits of the United States, only been observed on the Rio Grande in Texas. Several naturalists, however, mention having heard of a small species of King-Fisher in Southern California, and it is probable that the present bird will yet be found inhabiting that State.

This bird may very readily be distinguished from the common species of the United States by its small size and different colors; but there are other South American species of the same genus which it resembles. There is a group of those birds, the species of which, in fact, bear so great similarity to each other in form and in colors also, that they can be distinguished specifically mainly by their size. This group embraces *Ceryle amazona*, *inda*, *superciliosa*, *Cabanisii*, and the bird now before us. The first is as large as our Belted King-Fisher (*Ceryle alcyon*), and has been found in Mexico. All of these species are colored very much like the present bird, though, as above intimated, presenting marked difference in size.

The King-Fishers are most abundant in the southern regions of the world, and the preceding two species are all that have ever been noticed within the limits of the United States, though several others inhabit Mexico. Two

species also are known as birds of Europe, though one of them (*Ceryle rudis*), like our second species in the United States, is a visitor only in the southern countries of that division of the globe.

In Asia and the Asiatic islands, and in Australia, numerous species of these birds are found. Some of the Australian species are the largest of this family, being of the size of or larger than the Crow of the United States, and are remarkable for their loud and discordant voices. They belong to the genus *Dacelo* of naturalists. Great diversity of size occurs in this family. There are other species (of the genera *Ispidina* and *Ceyx*), which are not larger than the Chipping Sparrow of this country, though, to all intents and purposes, regularly established King-Fishers, and probably preying on fishes of a size accordingly.

Though many of the birds of this family are partially aquatic in their habits, and subsist exclusively on fishes, there are species principally inhabiting the islands in the Pacific, and Australia, which are stated to live habitually in forests, subsisting on reptiles and small terrestrial animals of other classes. These birds belong to the genera *Todiramphus* and *Dacelo* of authors.

Naturalists enumerate about ninety species of King-Fishers, of which specimens of seventy-seven are in the collection of the Philadelphia Academy.

We find recorded no species of King-Fishers to be considered as doubtful or obscure birds of that portion of North America within our prescribed limits.

With this family we close that division of the Perching Birds classed by ornithologists as *Fissirostres*. Two other families, the *Trogonidæ* and the *Meropidæ*, are not represented by species inhabiting the United States or the more northern countries of this continent. Of the *Trogonidæ*, however, several species are found in Mexico, one of which (*Trogon mexicanus*) was observed by Lieut. Couch, in the northern part of that country, and will very probably yet be found within the present limits of this confederacy. All the American *Trogons* are birds of remarkable beauty, and one of them (*Calurus resplendens*) can scarcely be surpassed in any country. It inhabits Central America, and is the sacred bird of the aborigines, and mentioned by Mr. Stephens and other travellers in the countries which it inhabits. Its plumage, and that of many other American species, is of fine metallic golden green and scarlet.

Of the *Meropidæ*, or Bee-eaters, no species inhabits America. Those birds are almost restricted to Asia and Africa, one species only being European.



Baird's Buzzard

Buteo Bairdi *Hay*

On Stone by W^m E. Hitchcock

Lith. Printed & Col^d by J. T. Bowen, Phil.

BUTEO BAIRDII.—HOY.

BAIRD'S BUZZARD.

PLATE XLI. ADULTS?

OF the several new species of rapacious birds of North America, which have been discovered within a few years, the bird now before the reader is one of the most interesting. It is the second species now ascertained to inhabit this continent, of a group constituting the typical genus *Buteo* of naturalists, which until a recent period was supposed to be peculiar to the Old World, the previously known American species being Swainson's Buzzard (*Buteo Swainsonii*), a bird of the northern regions, little known and nearly lost sight of until recently by ornithologists.

The birds of this group are more active and Falcon-like in their habits than the other species of the North American Buzzards, all of which have been classified in other sub-genera. They also appear to be more strictly predatory in their habits.

The present species was discovered by P. R. Hoy, M. D., an active and enthusiastic naturalist of Racine, Wisconsin, who first observed it and obtained specimens in the vicinity of that city. In the same State, it has also been observed by the Rev. A. C. Barry, of Racine, and Mr. William Dudley, of Madison, both naturalists of extensive acquirements, who have done much to elucidate the zoology of that district. All of those gentlemen concur, however, in representing it as very probably a visitor only in Wisconsin, and migrating to more northern regions of the continent of America. In addition to their specimens, we have seen one other only, which is contained in a collection now deposited in the National Museum, Washington, and was obtained near the Great Salt Lake, Utah Territory, by Lieut. E. G. Beckwith, of the United States Army, in whose charge a party surveyed one of the proposed routes for a Railroad to the Pacific Ocean.

We have to express our obligations to Dr. Hoy for his kindness in furnishing the following notice of this bird for our present article:—

“Although never numerous, this fine Hawk is not unfrequently met with during the fall and spring, especially in the vicinity of Racine, but is exceedingly wary and difficult to approach, and as it is here an inhabitant almost exclusively of the prairies, the procuring of specimens even by an experienced hunter or collector, is almost entirely dependant on encountering it accidentally within gunshot.

“This bird may be readily known, though seen at a considerable distance or height in the air, by its long pointed wings and rapid flight; in the last respect somewhat resembling the Duck Hawk (*Falco anatum*), and in fact

looking somewhat like that species when on the wing. I witnessed not long since, a bird of this species flying rapidly, but he wheeled about suddenly and struck into a covey of Partridges with wonderful celerity of movement, and bore off in his talons sufficient evidence that his exploit had been fully successful. This bird possesses much greater activity of habits than any other of our Hawks of the same genus (*Buteo*), and its mode of flight is quite different.

"The favorite haunts of this species are the broad prairies, over which it may be seen generally flying or coursing around in quest of its prey, or occasionally perched in repose, but very carefully keeping out of the range of the gun. It is one of the most shy of our Hawks, and I have never known an instance of its visiting the vicinity of the farm-house, or disturbing the domestic poultry, as is done by nearly all other of our birds of the Falcon kind, much to the disadvantage of their reputation with our farmers and housewives. The present bird at least saves his character in that respect, for he never comes near, and prefers also that no one shall come near him.

"The prey of this species is principally Grouse, Quails, and other birds; but when opportunity offers, he does not disdain field-mice, or even snakes. The Pinnated Grouse, or Prairie Hen, as it is universally called in our region of country (*Tetrao cupido*), is his most common food, which, frequenting the prairies habitually, his pursuit of this bird is the cause of his being so constantly seen in such localities. Usually he has little difficulty in procuring a supply sufficient for his wants. I am under the impression that this bird does not rear its young in this part of Wisconsin, as I have never known its nest to be found, though I have of various other species. I have never seen this bird soar in the manner of other Buzzards. It is apparently a visitor only to this part of the State of Wisconsin."

The specimens obtained by Dr. Hoy, one of which is represented in the upper figure in our plate, present considerable similarity in colors; but we have seen one other, which had the colors much darker, and the under-parts especially much marked with black. The latter specimen is represented in our lower figure, and was obtained in the neighborhood of Madison, Wisconsin, by Mr. William Dudley, Secretary of the Wisconsin Natural History Society. The specimen from Utah Territory is almost precisely identical in color with those obtained by Dr. Hoy.

We have no further information respecting this interesting species.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS BUTEO. Cuvier, Regne Animal, I. p. 323. (1817.)

BUTEO BAIRDII. Hoy, Proc. Acad., Philadelphia, VI. p. 451. (1853.)

FORM. Rather smaller than *Buteo lineatus*; compact and robust; wings long, and pointed; third primary longest; tail moderate, rather wide, rounded.

DIMENSIONS. Female, total length of skin, $19\frac{1}{2}$ inches; wing, 15; tail, 8 inches, and about an inch longer than the folded wings.

COLORS. Female (Plate XLI., upper figure), entire upper parts dark brown, with a purplish bronzed lustre, especially on the wings; plumage of the head and neck behind, and some feathers on the back edged and tipped with yellowish white; upper tail-coverts yellowish white, with transverse bars of brown; tail above brownish cinereous, and having about ten narrow bands of brownish black, and tipped with white; under parts pale yellowish white or fawn color, with a few sagittate spots of brown on the sides, and a stripe of dark brown running downwards on each side from the corners of the mouth; cere, legs, and irides yellow.

YOUNGER? (Plate XLI., lower figure.) Upper parts very dark brown or nearly black, with a purplish lustre; under parts with almost every feather having a large spot of brownish black, which color predominates on the breast, presenting a nearly uniform color with the upper parts; throat with narrow stripes of the same color; flanks and inferior wing-coverts with circular and oval spots of white; tibiae dark brown, with transverse bars and circular and oval spots of reddish white; upper tail-coverts reddish white, with their outer edges brown, and with transverse stripes of the same; under tail-coverts yellowish white, with transverse stripes of brown; forehead white; cheeks yellowish white; stripes from the corners of the mouth wide and conspicuous. Sex unknown.

HAB. Wisconsin (Dr. Hoy, Rev. Mr. Barry, Mr. Dudley); Utah Territory (Lieut. Beckwith). Spec. in Nat. Mus., Washington, and Mus. Acad., Philadelphia.

OBS. This bird does not intimately resemble any other of the American Falconidae at present known, and is a well marked species, especially in the plumage above described as probably the younger. In this the nearly uniform brownish black breast and large spots of the same color on the other under parts are strongly characteristic. The plumage of the first described above bears some resemblance to the young of *Buteo lineatus*, and also to the young of *Buteo pennsylvanicus*, but not sufficient to require especial consideration.

To us it is a point of high interest that the present bird bears the name of one with whom our relations have been intimate and of the most pleasant character almost since boyhood. One who is a most competent and efficient officer of the first Institution in America for the diffusion of knowledge—one who has gained a rank amongst the first American zoologists; and better, no man lives who is more conscientious in the discharge of his duties, more respectful of all that renders life agreeable, or more faithful in his friendships, than SPENCER F. BAIRD, of the Smithsonian Institution.

TOXOSTOMA REDIVIVA. — (GAMBEL.)

THE CURVED-BILLED THRUSH.

PLATE XLII. ADULT MALE.

THE bird now before the reader is one of the most admired songsters of the western countries of North America. By competent judges, as we shall see in the course of the present article, he has been pronounced worthy of favorable mention, even when compared with our great sylvan vocalists, the Mocking Bird, and the Rufous Thrush, to both of which he can claim relationship, not distant.

Viewed as the representatives of principles embodied, as it were, in the various forms or rather classes of animal life, a consideration by no means to be overlooked in the present age of zoological science, birds are the especial exponents of the principles of the beautiful, and, of all classes of animals, appeal most directly to the higher faculties of the human mind. Entire symmetry and elegance of form, gracefulness of motion, agreeable and varied colors, and the fact that of the vast circle of animal life, they alone possess vocal powers which are musical, have recommended this class, and tended to perpetuate its high estimation in all civilized countries.

The flight of birds, never yet successfully imitated by the ingenuity of man (unlike in that respect the motions of fishes in their element), is a means of locomotion so entirely peculiar as always to have attracted attention, and, in past ages, wonder, even to such extent as to have assumed an aspect of superstition, not entirely ignorant nor reprehensible, because founded on facts of nature, manifesting itself in auguries and divinations, which commanded respect for centuries erroneously, but expanded into truth at last by the aid of the light of Inductive science. The conclusions of the learned and cultivated nations of antiquity, however apparently erroneous, are rarely without some foundation in and relation to truth, and in many cases are the origin of modern science. So the augurs were the first ornithologists, as the astrologers were the first astronomers.

The poets have found in birds the most attractive of animals. There is scarcely one from the great Grecian era of taste and poetry to the present day, in whose productions passages do not occur, recognised as beautiful and deriving their essential character from this class of objects. Hebrew and Greek were alike in this respect, whether in the derivation of sacred symbols or of imagery in poetic allusion; the Dove of the former is of the same general character as the Peacock of Juno, or the Sparrows of Venus, poetic and truthful to nature and of the same origin. The Greek poets found in birds suitable accompaniments for the most sublime creations of their genius,



The Curved-billed Thrush

their Deities. The greatest of Hebrew poets rejoices in the assurance that "the time of the singing of birds is come, and the voice of the Turtle is heard in the land."

Singing birds belong exclusively to the class of Insessores or Perching birds. One Falcon only (an African species, *Falco musicus*), is said to possess a musical voice, not making, though we much suspect, any considerable figure in that line. No wading, swimming, or gallinaceous bird makes any pretensions.

The song was long considered as entirely the expression of love during the season, which has its most pleasant analogy in the spring-time of life, but that conclusion admits of some exceptions. Many birds sing in autumn apparently without the pleasant incitement of either actual or prospective attachment. Cases occur, too, as we have sometimes witnessed, of a bird having, to all appearance, failed in securing the object of his choice, remaining alone and solacing himself with a song occasionally for the balance of the season;—possibly somewhat of the nature of deriving comfort from "ends of verse and sayings of philosophers."

Our present bird belongs to the family of Thrushes, but to a genus which can scarcely be said to be represented in the States on the Atlantic; though the Rufous Thrush (*Mimus rufus*) is very nearly related to it, if not actually belonging to the group. This bird has been observed by nearly all the naturalists who have visited western North America, and its history is comparatively well known. To our friend, Col. McCall, we have to acknowledge our obligations, as on many former occasions, for a contribution intended for our present article:—

"This remarkable bird, whose dulcet notes, flowing with exquisite smoothness, place him almost beyond rivalry among the countless songsters that enliven the woods of America, or indeed of the world at large, is as retired and simple in his manners as he is gay and brilliant in song. In his ordinary bearing, as well as in the very marked character of his flight, he exhibits a strong resemblance to our humble and unobtrusive, though always welcome vocalist, the Ferruginous Thrush (*M. rufus*); while in the faculty of modulating sweet sounds he is scarcely surpassed by the dashing, ambitious, and ever-animated Mocking Bird (*M. polyglottus*). His resemblance to the Ferruginous Thrush in the particulars above mentioned, forcibly impressed itself upon me the first time I saw the California bird. This was on the banks of the Rio Colorado, below the mouth of the Gila, where, in the month of June, the shade and seclusion afforded by the cotton-wood and the willow seemed to be a favorite abode of the species. I saw many individuals in the course of a ride of fifteen miles through this wild region. In one quiet nook I met with a pair 'in love and mutual honors joined,' who evidently had some dear little 'pledges of peace' secreted in the dense foliage around. They were greatly excited by my approach, deprecating the unlooked-for intrusion with abundant

energy and vehemence. It was then that their harsh, scolding notes, their motions, and all their attitudes, reminded me most forcibly of my old friends of the Atlantic groves, although, under other circumstances, the resemblance was sufficiently obvious. But, besides their traits of character, there is a striking resemblance in the organization of the two species; the bill, for instance of *M. rufus*, when compared with the bills of its congeners, *M. polyglottus*, *M. carolinensis*, and others, is found to be greatly elongated and much curved, and in this lengthened and curved bill (to say nothing of the shorter wings and longer tail) may easily be discerned a decided approach to the remarkable form developed in *T. rediviva* and other closely allied species. This coincidence of a similarity of organization with a similarity of manners is, I think, sufficiently marked to show a close relationship between the two species; or, in other words, to indicate *M. rufus* as the connecting link between these two distinct genera.

"The song of the California bird is far superior to that of the Thrush,—though it must be admitted that he has not the powerful voice of our Mocking bird, that prince of songsters, nor his imitative powers; but he certainly has a liquid mellowness of tone united with clearness of expression and volubility of utterance that cannot be surpassed. On the first occasion on which it was my good fortune to hear this bird fairly tune his pipes to sound a roundelay, the performer was perched upon the bare branch of an ancient oak, and his farewell carol to the departing day was delivered with a warmth and pathos so truly wonderful as to fill me with admiration and delight; and though I was then anxious to procure birds for the Museum of the Philadelphia Academy, I scarcely thought of molesting him whose vesper chaunt had just enlivened that wild, secluded vale! I cannot, even now, without a tweak of contrition and self-reproach, acknowledge that the desire to procure a "specimen" prompted me, some time afterwards, to shoot a bird of this species.

"This almost sacrilegious act, I feel bound to confess, met with a just reward; for, having placed my prize on the branch of a neighboring tree, in order to preserve its plumage unruffled, while I continued my pursuit after game (for the larder as well as for the cabinet) I had the mortification, on my return, to find that some savage wild animal, as little impressed by soul-stirring music, I might almost say, as myself, had made a hasty supper off my divine songster, feathers and all."

Dr. Heermann, in his manuscript notes, through his kindness now in our possession, thus mentions the present bird:—

"This bird is abundant. I have not only seen it in Northern California, but also as far south as Texas, on the borders of the Rio Grande. It is shy and retiring in its habits, and when startled, flies low for some distance, and plunging into a thicket, alights on the ground, and so conceals itself, that it is not again easily found. It runs or hops on the ground with considerable facility and speed.

"Among the feathered songsters of Western America, this bird is the most superior, and its song is a striking feature in the localities where it is found. Its notes are equal in harmony to those of the Mocking bird of the United States, though not so varied. To the miners it is well known by the name of the California Mocking bird, and it is with them a great favorite.

"It incubates in California, but the only nest that I ever found contained young in the month of July. This nest was composed of coarse twigs and lined with slender roots, not very carefully constructed, and resembling somewhat those of some other of the Thrushes."

Dr. Henry has also observed this bird in the vicinity of Fort Fillmore, rather abundantly, particularly during the months of October and November. It has been noticed, too, by nearly all the other naturalists who have visited California and New Mexico.

The figure in our plate is rather less than half the size of life.

The plant represented is a species of *Vernonia*, from the neighbourhood of Santa Fé, New Mexico, and was raised from the seed by Mr. Robert Kilvington, of this city.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS TOXOSTOMA. Wagler, Isis, 1831, p. 528.

HARPES. Gambel, Proc. Acad., Philada., II. p. 264. (1845.)

Bill long, much curved, somewhat depressed, blunt; ridges of both mandibles strongly defined; wings short, rounded; first quill short, fourth and fifth and sixth longest; tail long; legs robust; toes rather long; claws large, strong; plumage of the upper parts loose; feathers of the rump lengthened. A genus containing four or perhaps five species, all of which inhabit the western and southwestern countries of North America.

TOXOSTOMA REDIVIVA. (Gambel.)

HARPES REDIVIVA. Gamb., Proc. Acad. Philada., II. p. 264. (1845.)

FORM. The largest of the genus; bill long, curved; wings short, rounded, first quill subspurious, fifth and sixth slightly longest and nearly equal; tail long, graduated; outer feathers about one inch shorter than those in the middle; tarsi strong; toes long; claws, especially of the hind toes, large, strong.

DIMENSIONS. Total length, male, about $11\frac{1}{2}$ inches; wing, 4; tail, $5\frac{1}{4}$; bill, $1\frac{3}{4}$; tarsus, $1\frac{1}{2}$ inches.

COLORS. Entire upper parts light brown, slightly tinged with rufous on the rump; quills brownish black, edged on their outer webs with lighter; tail brownish-black, with a reddish tinge, lighter on the under surface; an obscure ashy white superciliary line; auricular feathers dark brown, with central white lines; throat white; breast and sides light brown, tinged with ashy and fulvous; middle of the abdomen, flanks and under tail-coverts rufous, darker on the last; bill black; tarsi lighter; "irides hazel." Sexes alike?

HAB. California. Spec. in Mus. Acad., Philadelphia, and Nat. Mus., Washington.

OBS. There are two other species of this genus, both of which the present bird somewhat resembles, but it can easily be distinguished on comparison by its larger size. From the published descriptions the different species cannot be distinguished so readily, on account of their similarity of form and general characters.

Dr. Gambel regarded this bird as identical with a species mentioned and figured by the distinguished, though unfortunate navigator, La Perouse, and published in "Voyage de La Peyrouse autour du Monde," Atlas, pl. 37 (Paris, 1797), under the name of "Promerops de la California Septentrionale." Under this impression, Dr. Gambel gave this bird its specific name, *redivivus*.

Whether it is the fact, however, that the figure in La Peyrouse represents the present bird, admits of some doubt. To us it is much more like *Toxotoma curvirostris*, a smaller species.



The Vermilion Flycatcher

CARDELLINA RUBRA. — (SWAINSON.)

THE VERMILION FLYCATCHER.

PLATE XLIII. MALES.

OF this brilliant-plumaged little Flycatcher, we have, we regret to say, but little information. It has been known as a Mexican bird since 1827, when specimens were sent to Europe for the first time by Mr. William Bullock, a Fellow of the Linnæan Society of London, who was then resident in Mexico, but has as yet been obtained once only within the limits of the United States. It was received in a collection made in Texas, and containing many interesting species, by Mr. J. P. Giraud, an accomplished and active ornithologist of the city of New York, and was by him first introduced as entitled to a place in the ornithological fauna of this country. Since that period no one of the several American naturalists who have visited Texas, has had the good fortune to meet with it.

This bird was first described by Mr. Swainson, in the Philosophical Magazine, new series, I. p. 367, but little or nothing more is said of it than on the authority of Mr. Bullock, it is stated to be an inhabitant of the table lands, and that the specimens in his collection were obtained in the vicinity of Valladolid. Mr. Bullock himself, in his interesting book, "Six Months in Mexico," does not allude to it.

Nor is there, in a more elaborate paper, in which this bird is described by the Baron de la Fresnaye, in Guérin's Magazine of Zoology (as cited below), a much more explicit or satisfactory history. Its habits, it is stated, resemble those of the Tits (Genus *Parus*), and it has a feeble cry like the syllables *pe-pe-pe*. Mons. de la Fresnaye's specimens were from Jalapa, and were killed in August.

This bird belongs to a group of Flycatchers of small size, of which various species inhabit the warmer parts of America, and are represented in the North only by the Redstart (*Setophaga ruticilla*), a common and well known bird of the United States. Nearly all the species are remarkable for the gay and showy colors of their plumage; but the bird now before us is certainly entitled to precedence on such foundation for pretensions. It is not equalled by any other species of its group, and is in fact one of the most beautiful of the smaller birds of North America.

Our figures, which represent adult males, are about two-thirds of the size of life, and were drawn from specimens obtained in Mexico, now in the collection of the Philadelphia Academy.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS CARDELLINA. Bonaparte, Cons. Av. p. 312.

General form rather lengthened and slender; bill moderate, with several pairs of slender bristles at the base of the upper mandible; wings rather long, with the third quill longest; tail long; tarsi and toes moderate, rather slender, the latter rather short; colors bright and showy. Two American birds only are classed in this genus.

CARDELLINA RUBRA. (Swainson.)

SETOPHAGA RUBRA. Swainson, Philos. Mag. I., new series, p. 367. (1827.)

SYLVIA MINIATA. La Fresnaye, Guérin's Mag. de Zool., 1836 (not paged).

PARUS LEUCOTIS. Giraud, Sixteen new species N. A. Birds, 1841 (not paged).

"SYLVIA ARGYROTIS. Illiger." Bonap. Cons. Av. p. 312.

FORM. Bill somewhat subulate, sharp; wing with the third quill longest; tail long, emarginate; tarsi slender; toes rather short; claws fully curved, compressed, acute.

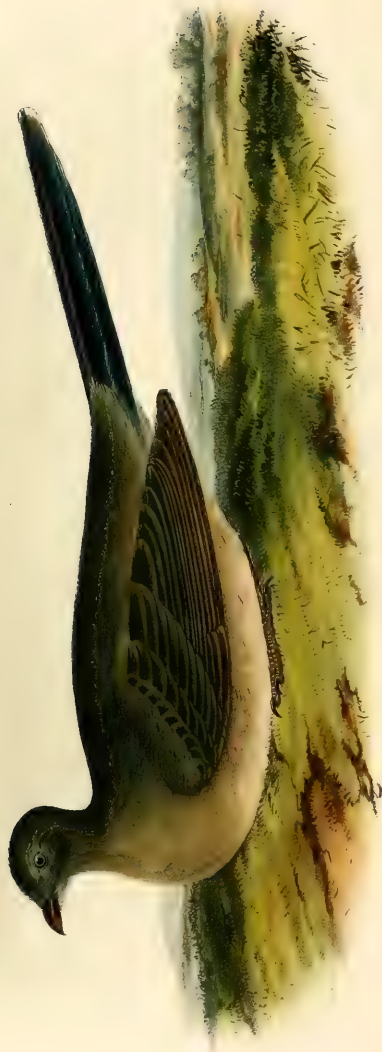
DIMENSIONS. Total length of skin, male, 5 inches; wing, $2\frac{1}{2}$; tail, $2\frac{3}{4}$ inches.

COLORS. MALE.—A well-defined large space behind the eye, fine silky white; quills and tail-feathers light hair-brown, with a tinge of cinereous and margined externally with dark red; entire other plumage above and below bright vermillion, lighter on the under-parts, and tinged with purple on the back; inferior coverts of the wings and axillary feathers pale reddish white; bill and tarsi light colored (yellow?).

HAB. Texas and Mexico. Spec. in Mus. Acad., Philada.

OBS. This little Flycatcher is of the same general form as the Redstart (*Setophaga ruticilla*) of the United States, and evidently belongs to the same family, though apparently presenting sufficiently distinct generic characters. It has nearer relatives than our northern species, inhabiting Mexico and Central America, very nearly all of which are clothed in plumage of gay and beautiful colors.

This bird does not resemble any other species with which we are acquainted in such degree as to render especial comparison necessary, and is very easily recognised.



The Laysan Duck

From Stone by Wm E. Hildrook

Ortalida poliocephala (Hatch)

Lith. Prater & Co. by J. T. Fowler. Ind.

ORTALIDA POLIOCEPHALA. — (WAGLER.)

THE TEXAN GUAN.

PLATE XLIV. ADULT MALE.

THIS bird is the only one yet discovered in the United States, of a family of Gallinaceous Birds, of which numerous species are found in the warmer countries of America. Various species inhabit Mexico and Central America, some of which, including that now before us, appear to be readily domesticated, and in Mexico especially, may frequently be seen amongst the usual feathered denizens of the farm-yard.

The birds of this group, known by the names of Guans, Curassow birds, and Mexican Turkeys, and the Turkeys proper, are two families of the Gallinaceous birds that are peculiarly American, and not distantly related to each other. Of the Turkeys, two species are known, the most numerous of which is the Wild Turkey of North America. The other, even more handsome in its plumage than the former, has as yet only been found in Central America, and is known as the Honduras Turkey. It is by no means well established that the Domestic Turkey is descended from the wild species of North America. Its origin probably has not yet been discovered.

The family to which our present species belongs (*Cracidae*), contains birds that for the greater part live in the forests, and are remarkable for habitually frequenting trees to a much greater extent than is usual amongst the larger Gallinaceous birds, and constructing their nests in the branches much in the same style as the smaller perching birds. Several species, amongst which is the bird now before us, have very loud and discordant voices.

The Curassow Birds (Genus *Crax*) are the best known of this family. They are generally of black or dark red plumage, more or less varied with white, and have very curious and handsome crests, of stiff, recurved feathers. These birds are frequently domesticated in Mexico and the other countries that they inhabit, and a species or two are contained in almost every menagerie of any considerable pretensions in the United States.

The species now before us was first noticed as a bird of the United States, by Col. McCall, who observed it in Texas. Since that period, it has been repeatedly obtained by American naturalists either in that country or in New Mexico.

With that ability and courtesy which has added so much to the interest of the present volume, Col. McCall has furnished the following for our article on this interesting bird:—

"This very gallant-looking and spirited bird I saw, for the first time within our territory, in the extensive forest of *chaparral* which envelopes the *Resaca de la Palma*, a stream rendered famous in the history of our country by the victory achieved by the American forces under Gen. Taylor. Here, and for miles along the lower Rio Grande, the *poliocephala* was abundant; and throughout this region, the remarkable and sonorous cry of the male bird could not fail to attract and fix the attention of the most obtuse or listless wanderer who might chance to approach its abode.

"By the Mexicans it is called *Chiao-chia-lacca*, an Indian name, and doubtlessly derived from the peculiar cry of the bird, which strikingly resembles a repetition of those syllables. And when I assure you that its voice in compass is equal to that of the Guinea-fowl, and in harshness but little inferior, you may form some idea of the chorus with which the forest is made to ring at the hour of sunrise. At that hour, in the month of April, I have observed a proud and stately fellow descend from the tree on which he had roosted, and mounting upon an old log or stump, commence his clear shrill cry. This was soon responded to, in a lower tone, by the female, the latter always taking up the strain as soon as the importunate call of her mate had ceased.

"Thus alternating, one pair after another would join in the matinal chorus, and before the rising sun had fairly lighted up their close retreat, the woods would ring with the din of an hundred voices, as the happy couples met after the period of separation and repose.

"When at length all this clatter had terminated, the parties quietly betook themselves to their morning-meal. If surprised while thus employed, they would fly into the trees above, whence, peering down with stretched necks and heads turned sideways to the ground, they would challenge the intruder with a singular and oft-repeated croaking note, of which it would be difficult to give any adequate idea with words alone.

"Indeed, the volubility and singularity of voice of the *poliocephala* is perhaps its most striking and remarkable trait—at least, it so appeared to me. In illustration of which I will state that, while on the march from Matamoras to Tampico, we had encamped on the 30th December, at the spring of *Encinal*, whence, a short time before sunset, I rode out in company with an officer in search of game. We were passing through a woodland near the stream, when our ears were saluted with a strange sound that resembled somewhat the cry of the panther (*Felis onca*). We stopped our horses and listened—the cry was repeated, and we were completely at a loss to what animal to ascribe it. I dismounted, and having crawled cautiously through the thicket for some distance, came upon an opening where there were some larger trees; from the lower branches of one of which I now ascertained that the sound proceeded. In a moment or two I discovered a large male *poliocephala* ascending towards the top of the tree, and uttering this hitherto

unheard sound as he sprang from branch to branch in mounting to his roost. He seemed to be much occupied with his own thoughts, and did not observe me; and therefore I was enabled to watch his movements. In a few moments his call was answered from a distance, and soon afterwards he was joined by a bird of the year. Others followed, coming in from different quarters; and there were, in a little while, five or six of them upon the tree. One of these now discovered me, and the alarm was given. The singular cry of the old bird ceased, and they all began to exhibit uneasiness and a disposition to fly; whereupon I shot the old bird, as I had resolved to secure him at all events. On rejoining my companion, he could not at first believe me to be serious, when I told him the sound we had heard had proceeded from the old cock that I presented to him, and who had been calling his family together at the close of day in the manner I have described. On my return to camp, I entered in my note-book the following description which I took from this bird:—

“Length 23 inches, 6 lines; alar stretch, 26 inches; tail, 11 inches; tarsus, 2 inches, 7 lines. The bill similar to that of the common fowl, but longer on the ridge and more curved at the point; the upper mandible light slate blue, the lower yellowish, but brown near the base; legs and feet blackish slate color; the nails black; the irides dark hazel; the chin devoid of feathers, and its skin, which is of an orange-red color, approximating in looseness to the gills of the common fowl; general color above, a brownish olive, with dark green reflections, deepest on the head; breast and belly light rufous, with whitish longitudinal pencillings; tail (of twelve feathers) darker than the back, and with a broad terminal band of dull white; wings dusky olive. A male; a very fine specimen, killed near Encinal, Dec. 30, 1846.

“A remarkable feature in the *poliocephala* is the eye, which in the living bird is full of courage and animation—it is equal, in fact, in brilliancy to that of the finest game cock.

“I frequently noticed this bird domesticated by the Mexicans at Matamoras, Monterey, &c., and going at large about their gardens. I was assured that in this condition it not unfrequently crossed with the common fowl; but I did not see the progeny.

“In the wild state, the eggs are from six to eight, never exceeding the last number. They are white, without spots; and rather smaller than a pullet's egg. The nest is usually made on the ground, at the root of a large tree, or at the side of an old log, where a hole several inches deep is scratched in the ground; this is lined with leaves, and the eggs are always carefully covered with the same when the female leaves them for the purpose of feeding. If disturbed while on her nest, she flies at the intruder with all the spirit and determination of the common domestic hen, whose retreat has been invaded.”

This species has been noticed by several of the naturalists who have recently made such important contributions to the ornithology of the southwestern frontier of the United States. Specimens brought by Mr. John H. Clark, were obtained near Ringgold Barracks, Texas. The fine collection made in Texas and Mexico, by Lieut. D. N. Couch, of the United States Army, contained specimens obtained in the State of New Leon, in the latter country.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS ORTALIDA. Merrem, *Icones et Desc. Av.* p. 40. (1786.)

General form rather slender and lengthened; bill short, curved, rather wide at base; aperture of the nostril large; wings short, rounded; fourth, fifth, and sixth quills longest; tail long; tarsi moderate, rather robust; colors usually plain. A genus of American birds, containing about fifteen species.

ORTALIDA POLIOCEPHALA. (Wagler.)

PENELOPE POLIOCEPHALA. Wagler, *Isis*, 1830, p. 1112.

FORM. Bill short, curved; wing short, rounded; first quill short, sixth slightly longest; secondaries long and broad; tail long, graduated; external feathers nearly three inches shorter than those in the middle; tarsi moderate, rather robust, and having in front about ten wide transverse scales; a bare space on each side of the throat from the corners of the lower mandible; feathers of the middle of the throat stiff and bristle-like; plumage of the head above somewhat elongated and erectile, and with the shafts of the feathers slightly rigid and hair-like, especially in front.

DIMENSIONS. MALE.—Total length of skin, about 21 inches; wing, 8; tail, 10; tarsus, $2\frac{1}{2}$ inches.

COLORS. Head above and neck dark greenish cinereous, the shafts of the feathers in front black; back, rump, wing-coverts, and exposed portions of quills, dark olive, slightly tinged with ashy; quills brownish black, widely edged on their outer web with olive; tail dark glossy bluish green, widely tipped with white; plumage of the middle of the throat black, bare spaces on each side reddish orange; breast, sides, flanks, and tibiae, dull yellowish green, very pale, and in some specimens nearly white on the middle of the abdomen, and frequently tinged with rufous on the flanks and tibia; under tail-coverts dark rufous, frequently tinged with green; bill dark, light at the tip, especially of the under mandible; tarsi light.

HAB. Texas. Mexico. Spec. in Mus. Acad., Philad., and Nat. Mus., Washington.

OBS. There is a general resemblance of several species of this genus to each other, almost impossible to be pointed out in the limits of our present article. The bird now before us may be recognised, however, without difficulty, by its comparatively large size and the dark cinereous color of its head and neck.

Specimens of this bird in adult plumage are yet rarely brought in collections, and we suspect is only attained in several years.

BERNICLA LEUCOPAREIA.—(BRANDT.)

THE WHITE-NECKED GOOSE.

PLATE XLV. ADULT MALE.

ON the western coast of North America, this is one of the most abundant of the species of Geese. In California it appears regularly in the course of its migrations in the spring and autumn, and at both seasons is brought to the market in San Francisco, in large numbers.

This bird is a near relative of Hutchins' Goose, a well known species, though not of common occurrence on the Atlantic coast. It is more frequently met with in the larger rivers of the interior. From that species our present bird may be easily distinguished by the white ring around the neck, a character not mentioned in the descriptions given by authors, nor represented in the plate in Mr. Audubon's Birds of America, of Hutchins' Goose. The plate alluded to is the only one of the species which has come under our notice, and is given with that eminent naturalist's usual great accuracy, but may not, we suspect, represent a bird in mature plumage. This suspicion we have been induced to entertain from an examination of the specimen figured by Mr. Audubon, for an opportunity to make which we are indebted to the kindness of our friend, Mr. J. P. Giraud, of New York, to whose fine collection it belongs.

We are not, however, sufficiently familiar with Hutchins' Goose, to feel qualified to decide respecting the identity of the present species.

This bird was first described by Prof. Brandt, a distinguished Russian naturalist, who ascertained it be an inhabitant of the coasts of Russian America. This author, and various others of Russia, have done much towards elucidating the Natural History of Northwestern America, and in some instances names given by them will be found to anticipate those of Americans, especially in ornithology.

As a species occurring on the coast of California, our present bird was first observed by Mr. John G. Bell, of New York, whose collection made in that country contained numerous specimens. Since that period, it has been noticed by nearly all our naturalists, though nothing is recorded of its habits or history. In fact, the water-birds of Western America have by no means received sufficient attention, and contributions to their history would be important additions to American ornithology.



The white-necked Goose

Store by Wm. E. H. Hancock

Branta leucoparens, Branta

Printed & Col'd by J. T. Bowen, Phil

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *BERNICLE*. Stephens, Cont. of Shaw's Zool. XII. p. 45. (1824).

BERNICLE LEUCOPAREIA. (Brandt.)

ANSER LEUCOPAREIUS. Brandt, Bulletin Acad., St. Petersburg, I., p. 37.

Desc. et Icones Animalium Rossicorum novorum. Aves, p. 13, pl. 2, (1836.)

ANSER HUTCHINSII. Richardson, Fauna Boreali Americana, Birds, p. 470? (1831.)

"*ANSER CANADENSIS*. BRISSON." Pallas, Zoographia Rosso-Asiatica, II., p. 230.

FORM. Bill small, short, wide vertically at base; wing long, second quill longest; tail short; legs short; toes moderate, fully webbed. A protuberance on the edge of the wing near the shoulder. One of the smallest of the species of this genus.

DIMENSIONS. Total length, male (of skin) about 23 inches, wing 15, tail $5\frac{1}{2}$ inches.

COLORS. Head and neck glossy black; a large somewhat reniform patch on each cheek, white, and a ring around the neck of the same (white) at the termination of the black part. Entire upper parts fuscous, lighter on the back, and with the feathers edged with paler and very dark, nearly black on the rump; upper tail coverts white; quills and tail brownish-black; secondaries edged outwardly with pale brown; breast and abdomen glossy yellowish ashy, with transverse stripes of brown on the sides; ventral region and under tail coverts, white; bill and feet dark; under wing coverts and axillaries light ashy brown; the white ring around the neck more or less interrupted behind; the white patches on the cheeks separated by a narrow longitudinal band on the throat.

HAB. California. Russian America. Spec. in Mus. Acad., Philad.

OBS. As stated in the preceding pages, this bird much resembles, if it is not identical with, the species known as *Bernicle Hutchinsii*, from which the most essential distinctive character is the white ring around the neck. If identical, we have, at any rate, the gratification of being the first to represent that species, in mature plumage. At present we regard it as a distinct, though nearly allied bird.

The date of the publication of Prof. Brandt's first description we have not succeeded in ascertaining, not having access to the Bulletin of the Academy of St. Petersburg. The reference to the volume and page we copy from his own citation, in his work above quoted, in which, however, the date is not stated.

THALASSIDROMA FURCATA. — (GMELIN.)

THE GRAY STORM PETREL.

PLATE XLVI. ADULTS.

THE little birds of the group to which that now before the reader belongs, are known to seamen, wherever the English language is spoken, as Storm Petrels, or "Mother Carey's Chickens," and have too, a reputation, not without a tinge of superstition, of being the harbingers of the storm and of maritime disaster.

Of the many birds adapted by their organization to a life of adventure on the ocean or its tributaries, and of which in fact during a large portion of their lives they are almost as much inhabitants as fishes, the Albatrosses and the Storm Petrels, or Mother Carey's Chickens, venture the most boldly. The birds of both these genera, though one contains the largest and the other the smallest of marine birds, are alike in this particular character, and are also alike known as inhabitants of shores very remote from each other, and as wanderers over immense extents of the ocean.

Boldly directing their course far out on the sea, like their gigantic relatives the Albatrosses, our present little birds are frequently to be met with in nearly all latitudes usually traversed by navigators, and are generally tempted to remain for a time in the wakes of vessels, and about them, by the fragments of food to be gleaned from refuse thrown overboard. Flitting as it were before the gale, with it, the appearance of these birds may readily be coincident, or premonitory of its coming, thus acquiring, and perhaps in some degree justly, the attributed character of precursors.

Several species of these birds are found on the coasts of the United States. The most abundant and best known is Wilson's Storm Petrel (*Thalassidroma Wilsonii*), a bird which is perhaps to be regarded as more nearly cosmopolite than any other, so extensive are its wanderings over the surface of the ocean. It is of common occurrence throughout the whole extent of the eastern shores of the continent of America, and it has been repeatedly noticed and captured at various points on the coasts of Europe and Africa, thus demonstrating a range over nearly the entire Atlantic Ocean. In the Pacific also it is well known, though it is not so abundant. Mr. Gould gives it as a bird of Australia; and the naturalists of the United States' Exploring Expedition in the Vincennes and Peacock, record its appearance at various other points in the Pacific Ocean.



The Laysan Petrel

On Stone by W^m E. Hitchcock

Lith. Printed & Col^d by J. T. Bowen, Phil.

Thalassidroma fulvata (Forst)

The histories of this, and of other American species of Storm Petrels, are perhaps as well known as those of the sea-birds generally, and much that is interesting may be found in the articles on them in the works of our predecessors in American Ornithology; but we cannot allow the present occasion to pass without availing ourselves of the kindness of our friend, Charles Pickering, M. D., of Boston, one of the naturalists attached to the Exploring Expedition, and justly ranked with the most eminent of American Zoologists.

With his characteristic liberality, Dr. Pickering has placed at our disposal much valuable information relative to birds observed during the voyage of the Expedition, especially on the western coast of North America, and in other localities of interest, with reference to American species. From his manuscript we copy the following in relation to Wilson's Petrel, which occurs under date of October 24th, 1838, and from the latitude and longitude given, the nearest land was the coast of Africa:

"A stormy Petrel taken, which proved to be *Thalassidroma Wilsonii*, and although this species and others of its genus have been constantly seen during the voyage of the Expedition, this is the first specimen that has been captured without having been injured, thus affording whatever facilities can be obtained on shipboard for observing its manners.

"I was rather surprised to observe that this bird was not only entirely incapable of perching, but even of standing upright like birds in general, and as I have seen birds of this genus represented, unless by the aid of its wings. In standing, or rather sitting, the whole of the *tarsus* (commonly mistaken for the leg) rests on the ground, and it walks in the same awkward position, frequently being obliged to balance itself with its wings. By a more powerful exertion of its wings, however, it was enabled to run along on its toes in the same manner as it does over the surface of the waves. The absence of a hind toe, the nails being but slightly bent and flat, and perhaps I may add, its evidently being unaccustomed to this description of locomotion, seemed to be the causes of its helplessness on its feet.

"These birds have been numerous about us for some days past, and their coursing over the water with flitting wings remind me of the actions of butterflies about a pool. One of them was seen swimming, or at least resting, on the surface. We have seen this species very frequently, indeed almost daily, since leaving America, and scarcely any other sea-birds, except in the immediate vicinity of the islands. It would seem that it scarcely ever visits the land, except for the purposes of incubation, and there can hardly be a better comment on its untiring power of wing than the popular fable amongst seamen that it carries its egg and hatches its young while sitting in the water. It does not sail in the continued manner of the gulls and some other sea-birds, but moves by rapidly flexing its wings something like a bat, and was continually coursing around and in the wake of the vessel, generally in considerable numbers, during much the greater part of the time that the Expedition was in the Atlantic Ocean."

The curious fact that this bird cannot stand upright we do not remember ever before having seen noticed. Of the specimen alluded to, Dr. Pickering gives notes of a minute and evidently very careful anatomical examination, which the limits of our present article will not allow us to insert. They are, however, confirmatory, in most respects, of the account of the anatomy of this species, given by Mr. Audubon, in *Ornithological Biography*, V., p. 645.

The bird before the reader in the present plate is an inhabitant of the Northern Pacific Ocean, and is an interesting addition to the ornithological fauna of the United States, made by the naturalists of the Exploring Expedition, under command of Captain Charles Wilkes, to which we have previously alluded. Though long known as a bird of the coasts of Asiatic Russia and of Russian America, it had never before been noticed on the more southern coast of Oregon, where it was found in large numbers by the Expedition, and specimens then obtained are now in the National Museum at Washington.

This bird was first noticed by the celebrated Pennant, in *Arctic Zoology*, Vol. II., p. 255, who called it the "Fork-tailed Petrel." An accurate description is given by him, but no further account of it than merely stating "taken among the ice between Asia and America." On the faith of this description, Gmelin, in *Systema Naturæ*, as cited below, gave the scientific name. Subsequently, Pallas mentions it as an inhabitant of the coasts of Unalashka and of the Kurile Islands. It is also mentioned in the *Zoology of the Voyage of the Sulphur*, (London, 1844,) and very handsomely figured from specimens obtained at Sitka in Russian America.

To the journal of Dr. Pickering we have again to acknowledge our obligations for a notice of this bird. First recording its occurrence on the 26th of April, 1840, at sea, the distance from the coast of Oregon being about 200 miles, he subsequently mentions it under date of 29th of the same month, as follows:

"In sight of the coast of Oregon. Great numbers of the gray *Thalassidroma* are to-day flitting around and in the track of the vessel, very actively engaged in searching for particles of food thrown overboard. Generally, this bird reminds us of *T. Wilsonii*, but the wings seem longer, and its movements appear to be more rapid, and in fact more like that of the larger Petrels, (*Procellaria*.) It occasionally sails in its flight, but for the greater part moves by very rapidly flexing its wings in the same manner as the species mentioned.

"These birds proved not difficult to capture, and several specimens were taken with a hook and line. They would dive a foot or two after the bait, and made use of their wings in and under the water, from which they apparently had not that difficulty in rising observable in the Albatrosses. Though their powers of swimming seemed rather feeble, they alighted in the water without hesitation. The dead body of one of their companions being thrown

overboard, they clustered around it with as much avidity as around any other food.

"The specimens obtained agree generally in color of plumage, being nearly a uniform pale gray, with the abdomen sometimes paler or nearly white, and generally showing a lighter bar across the wing, when expanded. Uttered a faint note when taken on board."

At present we have no further information relating to this interesting species.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS *THALASSIDROMA*. Vigors. Zool. Jour. II., p. 405. (1825.)

Size small; bill rather wide at base, compressed towards the end, and abruptly hooked; lower mandible shorter; nostril elevated, tubular; wings long, pointed, second quill usually longest; tail moderate, rather wide, usually emarginate or forked; legs long, slender; tibiæ more or less naked above the joint with the tarsi; toes rather short, fully webbed. A genus comprising about twelve species, all of which are strictly marine, and inhabit the various oceans of the world.

THALASSIDROMA FURCATA. (Gmelin.)

PROCELLARIA FURCATA. Gm. Syst. Nat. I., p. 561. (1788.)

PROCELLARIA ORIENTALIS. Pallas. Zoog. Ross. As. II., p. 315. (1831.)

THALASSIDROMA CINEREA. Gould.

FORM. Wing long; second quill longest; tail forked; legs shorter than usual in this genus; under coverts of the tail long.

DIMENSIONS. Total length (of skin) about 8 inches; wing 6; tail 4 inches.

COLORS. Entire plumage light cinereous or lead color; lighter, and in some specimens, nearly white on the abdomen and under tail coverts; lesser wing coverts darker; in some specimens nearly black; quills and tail slightly tinged with brown; greater wing coverts and secondaries pale on their outer edges; primaries nearly white on their inner edges; bill and feet black.

HAB. Coasts of Oregon, Russian America, Northeastern Asia, and the Pacific Ocean. Spec. in Nat. Mus., Washington, and Mus. Acad, Philad.

This bird belongs to a group of the genus *Thalassidroma*, of which *T. marina* is the best known species, an inhabitant of the Southern Pacific Ocean, and figured by Mr. Gould as a bird of Australia.

All the species of this group are characterised by cinereous plumage, a strong distinctive character from the greater part of the birds of this genus, which are of dark colors, and in some species nearly black. The present bird does not, in any considerable degree, resemble any other American species, and may be easily recognised.

SYLVICOLA KIRTLANDII.—BAIRD.

KIRTLAND'S WARBLER.

PLATE XLVII. ADULT.

OF the smaller birds of North America, no group exceeds that of the Warblers, in variety and richness of color. It is, too, one of the largest of the groups of our birds, embracing not less than forty species, besides several which are South American.

Migrating in the spring, and again in the autumn, these little birds are known in the Middle and Southern States, for the greater part as visitors only, though various species are residents during the summer, which have been supposed to continue their journey much further north, before undertaking the duties of incubation. The Blackburnian Warbler (*Sylvicola Blackburniæ*), the Chestnut-sided (*S. icterocephala*), the Yellow-backed (*S. Americana*), and several others, breed in the mountains of Pennsylvania. The Prairie (*S. discolor*), the Blue-winged (*Helinaia solitaria*), and two or three other species, are to be met with every summer in the neighborhood of Philadelphia. The greater number of species proceed further north, but much the majority of all known as North American rear their young within the limits of the United States, as well as in more northern countries; but by no means exclusively in the latter, as is to be inferred from the representations of various authors. The Black-poll (*S. striata*), raises its young in the State of Maine.

These birds are great favorites with collectors. Coming northward, as many species do in the months of April and May, when excursions to the woods are attended with such agreeable accompaniments, the short period of their stay is the most deeply interesting of the ornithological season, whether the object be to study birds in the fields and woods, or only to procure choice specimens for the cabinet. In either case, the observer or collector will find himself greatly tempted by these attractive little birds, to the exclusion, probably, of others, not so gay, perhaps, in plumage, but equally interesting in other respects.

Bird-collecting is the ultimate refinement,—the *ne plus ultra* of all the sports of the field. It is attended with all the excitement, and requires all the skill, of other shooting, with a much higher degree of theoretical information and consequent gratification in its exercise. Personal activity, not necessarily to be exerted over so great a space as in game-bird shooting,



Kirkland's Warbler.

On Stone by W^m E. Hitchcock

Silvicola Kirklandi Baird

Lith. Printed & Col^d by J. T. Bowen Phil

but in a much greater diversity of locality, coolness, steadiness of hand, quickness of eye and of ear, especially the latter; — in fact, all the accomplishments of a first-rate shot, will be of service; and some of them are indispensable to successful collecting. The main reliance is, however, on the ear, for the detection of birds by their notes, and involves a knowledge, the more accurate and discriminating the better, which can only be acquired by experience, and always characterizes the true woodsman, whether naturalist or hunter.

This ability is of incomparable value to the collector. Whether in the tangled forest, the deep recesses of the swamp, on the sea-coast or in the clear woodlands, on the mountain or in the prairie, it advises him of whatever birds may be there, or affords him a higher gratification, announcing the presence of a bird that he does not know. We recognise no more exquisite pleasure than to hear a note that we are not acquainted with in the woods. It is in the latter case, too, that the cultivated quickness of eye of the experienced collector is especially important, and his coolness and steadiness of nerve is fully tested. It will not do to be flustered. But in fact all these qualities must be possessed for the acquirement of the smaller species of birds found in the woodlands. Some species of Warblers, for instance, are constantly in motion in the pursuit of insects, and are most frequently met with in the tops of trees, and are, moreover, only to be killed with the finest shot, or they are spoiled for specimens. The obtaining of these little birds often requires the most accurate and skilful shooting.

There are comparatively few superior ornithological woodsmen, though we are inclined to believe more amongst the naturalists of this country, than of any other. There are some who never learn, though shooting for years; and passages constantly occur in the works of authors, notwithstanding their professions, and however honestly such may have been made, exciting immediate suspicion that they were really little skilled in woodcraft. We know men who have long been bird-collectors, but who have never acquired the ability to distinguish species by their notes, nor in fact otherwise to any considerable extent. On the other hand, we have gone repeatedly on excursions of several miles, in company with naturalists and accomplished woodsmen, for the sole purpose of hearing the note of a single species with which they had not before had an opportunity of becoming acquainted. This has been especially the case with reference to the Prairie Warbler (*Sylvicola discolor*), which is always to be met with in the summer, in the sandy thickets and in neglected fields in New Jersey, and has several notes very peculiar and characteristic.

It is by no means desirable, however, to be exclusively a naturalist of the woods, and in fact the greatest degree of accomplishment that can be acquired in this line, entitles one to but a very humble rank as a cultivator of Zoology. There must be a combination of theoretical and practical acquirements, and the gratification of the practical naturalist or the collector will be exactly in

proportion to his scientific or systematic information, to be obtained only in the museum and the library. There is an indescribably pitiful display of ignorance and meanness of idea in arrogating, as some writers have done, a superior position for the "field-naturalist" over the "closet-naturalist." As well might he who navigates a ship presume on being the greatest of astronomers, or the practical gauger pretend to be the only mathematician. Great is life in the woods, say we, and the greatest of all sports is bird-collecting; but, to become a scientific ornithologist, is quite another business, and a very much more considerable consummation. But we have digressed from the Warblers.

In the neighborhood of the cities, and in fact throughout the Middle and Northern States, during the last of April and the whole of May of every year, numerous species of Warblers are to be found in abundance. It happens occasionally though, that a species, usually common, is scarcely to be seen in the whole season, and sometimes is rare for several seasons in succession. The Black-throated blue Warbler (*Sylvicola canadensis*), for instance, is generally very abundant in Pennsylvania in May, and so is the Chestnut-sided (*S. icterocephala*); but we have noticed seasons in which all the collectors of Philadelphia would scarcely obtain a specimen of either. It sometimes happens, too, that a species makes its appearance in considerable numbers, and then is of much less common occurrence for years. This was the case with the Blackburnian Warbler in May, 1840. That beautiful little bird was so abundant, that our early and intimate friend, the late Mr. William R. Spackman, then anxious to collect for the purposes of general study and for exchanges, shot upwards of twenty specimens during a morning's excursion in company with us near Kaighn's Point, New Jersey; and had they been wanted, could readily have obtained a much larger number in the afternoon, or, as termed by bird-collectors in common with sportsmen, during "the evening fly." It continued very plentiful through the entire spring migration, but we have not seen it so abundant more than once since, though fifteen years have elapsed.

Very erroneous impressions relative to the rarity of several species of Warblers, have been created by statements which have found their way into the works of both Wilson and Audubon. For instance, the former of these celebrated authors says of the Chestnut-sided Warbler:—"In a whole day's excursion it is rare to meet with more than one or two of these birds;"—the latter, at the time of the publication of the first volume of his Ornithological Biography (1831), had met with this bird once only (Orn. Biog. I., p. 306), and so it stands printed in his octavo edition of "The Birds of America," (II., p. 35, 1840.) These rather extraordinary statements have caused the useless destruction of very many specimens of this little bird, particularly by young collectors, under a false estimate of its scarcity in collections, or value for the purposes of science. There have been few months of May in

the last twenty years, in which any person of moderate skill as a collector of birds, could not have obtained, in the vicinity of Philadelphia, as many specimens of the Chestnut-sided Warbler as would have supplied all the Museums in the world.

Again, in the months of September and October, Warblers are abundant in our woods, but the plumage of many species is materially altered from that of Spring. The student of ornithology must by no means, however, neglect to become acquainted with it, and will find this knowledge exceedingly valuable and interesting, as he advances in this branch of science.

The bird represented in the plate now before the reader, is one of the rarest as yet of the North American species of Warblers. Like several others that are well established as species, it has been obtained once only, which was in the vicinity of Cleveland, Ohio, by Professor J. P. Kirtland, of that city, who presented it to Professor Baird, by whom its discovery was first announced in the Annals of the New York Lyceum, as cited below.

This species is related to the Yellow-crowned Warbler, or Myrtle Bird, as it is sometimes called (*Sylvicola coronata*), a common species of the United States, and to Audubon's Warbler (*S. Auduboni*), a Western species, but differs from them in strong and unmistakable characters. It is probably a species inhabiting the more western regions of the continent of North America.

We are informed by Prof. Kirtland, that the specimen alluded to was shot in the woods near Cleveland, and, so far as observed, was not noticed to differ in habits essentially from *S. coronata*, or other of our species of Warblers usually found migrating in the Spring. Though it was captured in the Spring of 1852, and the species has been carefully looked for ever since at the same season, it has never again been observed.

The figure in our plate is about two-thirds the size of life.

The plant represented is a species of *Penstemon* from Texas, raised in the Horticultural establishment of Mr. Robert Kilvington, of this city.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS SYLVICOLA. Swainson. Faun. Bor. Am. Birds, p. 204. (1831.)

Size small; bill moderate, slightly curved, tapering gradually to the tip, slightly notched; wings rather long; second and third quills usually longest; tail moderate, or rather long, usually emarginate; legs rather long, slender. An American genus, embracing a large number of species, nearly all of which are of bright or gay colors.

SYLVICOLA KIRTLANDII. Baird. Ann. Lyc. Nat. Hist., N. Y., V., p. 218. (1852.)

FORM. About the size of *S. coronata*. Rather large for this genus; bill straight; wing moderate; third quill slightly longer than the second; tail rather long, emarginate; legs slender.

DIMENSIONS. Total length (of skin) male, $5\frac{1}{2}$ inches; wing $2\frac{3}{4}$; tail $2\frac{1}{2}$ inches.

COLORS. Entire upper part, bluish-ashy; on the head and back nearly every feather having a longitudinal line of black; front and space before and under the eye, black; quills dark-brown, paler on their outer edges; tail brownish-black, several of the outer feathers having a white spot each on their inner webs; entire under parts pale-yellow, with small spots of black most numerous on the breast and sides, and obsolete on the throat and middle of the abdomen; under tail coverts nearly white; bill and feet dark.

HAB. Northern Ohio.

This bird bears an evident relationship to *Sylvicola coronata*, and to *S. Auduboni*, from either of which it may at once be distinguished by the entire absence of the yellow rump which characterises both the species mentioned. It does not, however, resemble either of them to such extent as to render a minute statement of comparative characters necessary. The specimen above described is not in entirely mature plumage.

We most cordially concur in the justice of naming this handsome little bird in honor of our friend, Professor Jared P. Kirtland, M. D., of Cleveland, Ohio; a gentleman who, to a reputation in private life most exemplary and unexceptionable, adds high distinction as a naturalist and pioneer of the Zoological Sciences in the Western United States.

To our friend, Thomas M. Brewer, M. D., of Boston, we are indebted for much valuable information on the incubation and breeding places of many of the Warblers of the United States. This interesting department of Ornithology has been a special matter of research with Dr. Brewer for many years; and we are happy to learn that his great work on the Oology of North America is shortly to appear under the auspices of the Smithsonian Institution. We venture to say that no more valuable contribution to American Zoology has ever appeared.



The Orange breasted Warbler

SYLVICOLA OLIVACEA. — (GIRAUD.)

THE ORANGE-BREASTED WARBLER.

PLATE XLVIII. ADULT.

OF this handsome and peculiar-looking Warbler, unfortunately we can say very little. It is known as a bird of Mexico, but has been noticed within the limits of the United States, as yet, in one instance only, having been received from Texas by our friend, Mr. Jacob P. Giraud, Jun., of New York. At the period of its receipt it was unknown to ornithologists, and it was accordingly described by Mr. Giraud, with other new and interesting species, in his "New Species of Birds of North America."

Since the time of the discovery of this bird, we have looked for it, with constant interest, amongst the many new and little-known birds collected by American naturalists in Texas, but in vain. It has not yet appeared again, and is to be regarded as one of the now numerous birds of our country, of which the history remains to be written by the future naturalist.

The Baron Du Bus, an ornithologist of Belgium, has received this bird from Mexico; and specimens, also from that country, are in the collection of the Philadelphia Academy. The short notice of it by the author just mentioned in the Bulletin of the Royal Academy of Brussels, contains no account of its history or of its habits; nor have we any information from other sources. From the fact of its visiting Texas in the summer, however, we infer that it is a species of which the Southern range probably extends into Central or perhaps South America.

In general appearance, this bird somewhat resembles the Prothonotary Warbler (*Helinaia prothonotaria*), of the United States, but is much darker colored, and it does not belong to the same group or sub-genus.

The figure in our plate is about two-thirds the natural size.

The plant represented is a species of *Asclepias* from Texas, raised from the seed by our friend, Mr. Kilvington.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS SYLVICOLA. Swainson. Faun. Bor. Am. Birds, p. 204. (1831.)

SYLVICOLA OLIVACEA. (Giraud.)

SYLVIA OLIVACEA. Giraud. New species of N. A. Birds, p. 14, pl. 7, fig. 2. (1841.)

SYLVIA TENIATA. Du Bus. Bull. Acad., Brussels, XIV., p. 104. (1847.)
(283)

FORM. About the size of *Sylvicola æstiva*. Bill slender; wing rather long, pointed; second and third quills longest, and nearly equal; tail moderate, emarginate; tarsi long, slender.

DIMENSIONS. Total length (of skin) about $4\frac{3}{4}$ inches; wing $3\frac{1}{4}$; tail $2\frac{1}{4}$ inches.

COLORS. Entire head, neck, and breast, dark orange, inclining to rufous, lighter on the throat; through the eye to the ear, a band of black; back and rump ashy-olive; quills brownish-black, edged on their outer webs with yellowish-olive, and on their inner webs with white; tail brownish-black, the outer feathers with a spot of white on their inner webs near the end; wing coverts brownish-black tipped with white, forming two conspicuous bars on the wing; abdomen and under tail coverts, pale greenish-ashy, nearly white in the middle of the former; under wing coverts white, tinged with ashy; bill dark, lighter at base of under mandible; tarsi dark.

HAB. Texas. Mexico. Spec. in Mus. Acad. Philada.

This bird presents some affinities and resemblance to the *Sylvicola protonotarius* of the Southern United States, but is much darker colored, and may readily be distinguished from that or any other species with which we are acquainted.



The Great crested Woodpecker.

On Stone by W^m E. Hitchcock

Lith. Printed & Col^d by J. T. Bowen, Phil.

Dryotomus imperialis. (Gould)

DRYOTOMUS IMPERIALIS.—(GOULD.)

THE GREAT-CRESTED WOODPECKER.

PLATE XLIX. ADULT MALE.

THOUGH not clearly made out as a bird entitled to a place in the ornithological fauna of the United States, we have given the plate now before the reader on grounds regarded as sufficient for the introduction of descriptions of this magnificent species into the works of other American authors, though it has never before been figured.

This is the largest of all known Woodpeckers, and is one of the most beautiful in plumage. It belongs strictly to the same group or genus as other large American species.

Though originally described by Mr. Gould as from California, and subsequently supposed by Dr. Townsend and Mr. Audubon to have been seen by the former in the Rocky Mountains, it has escaped the attention of all recent American travellers and naturalists. The specimens in the collection of the Philadelphia Academy are labelled as having been collected in Mexico. It is probable that this fine bird is an inhabitant of the dense forests, the trees of which attain such enormous dimensions in the western regions of North America, a supposition coinciding with Dr. Townsend's observations on the species seen by him, from which we shall present an extract in the course of the present article.

In the immense forests which skirt the slopes of the Rocky Mountains in the possessions of the United States, and of the Sierra Madre in Mexico, we find a congenial locality for this giant of his tribe. In those regions the trees are not less gigantic, travellers of unquestioned veracity having given two hundred and fifty to three hundred and fifty feet as a height frequently to be observed.

The first notice of this bird by an American naturalist is in Mr. Audubon's Ornithological Biography, V., p. 313, who merely publishes a note from Dr. Townsend, which was his only information respecting it, except Mr. Gould's description. It will be seen that Dr. Townsend did not succeed in obtaining specimens, though it is in all respects probable that the species now before us is alluded to by him in the following, which we take the liberty of copying from Mr. Audubon, as above :

"On the 14th of August, 1834, I saw several specimens of a large black Woodpecker, about the size of *Picus principalis*. A broad band of white

appeared to extend transversely across the wings and back. It inhabited the tall pine trees, and was very shy. The note was almost exactly that of the Red-headed Woodpecker; so nearly, that at first Mr. Nuttall and myself were both deceived by it.

"I lingered behind the party, which at that time was travelling rapidly, and at last got a shot at one of them with slugs, my large shot having been entirely expended. The bird fell wounded in a thicket at a considerable distance. I searched for an hour without finding it, and was at last compelled to relinquish it and follow the party, which had been leaving me at a rapid trot, to find my way as I best could, and keep out of the reach of Indians, who were dogging us continually."

On reference to Dr. Townsend's Narrative, (p. 123,) it will be seen that this incident occurred on the Mallade River, in the Rocky Mountains. Though he states that the bird mentioned by him was "about the size of *Picus principalis*," which is the Ivory-billed Woodpecker of the Southern States, it must be borne in mind that he saw it at a distance only, and was therefore readily mistaken. The present bird is very considerably larger than that species.

In Dr. Pickering's notes we find one allusion which is very probably to this bird:—"A very large Ivory-billed species of *Picus* was spoken of by Dr. Marsh as having been occasionally seen by him. It is larger, he says, than any other Woodpecker of the United States, and is very difficult to approach. It is probably the new California species described by Mr. Gould a few years since."

This memorandum occurs in that portion of Dr. Pickering's journal kept in California, and we have no doubt relates to the bird now before us. To the gentleman mentioned, Dr. Marsh of San Joaquin, California, Dr. Pickering frequently acknowledges his obligations for information, which is often of high value, and is of evident reliability.

We have now given the only two instances, mere glimpses as it were, in which this large Woodpecker has come under the notice of American travellers or naturalists in its native localities. It is to be regretted that such is the case, and perhaps somewhat extraordinary, on account of its conspicuous size and colors; but it is expressly stated to be of a shy disposition, and difficult to obtain. Its well known existence in California, and the fact that so few of our naturalists have observed or heard of it, is additional evidence of the yet partial character of our knowledge of the ornithology of that country.

Mr. Gould's description of this bird is in the Proceedings of the Zoological Society of London for 1832, p. 140; and, with the statement accompanying it, is the only notice of this species that has yet appeared in Europe. The latter is as follows:—

"Specimens were exhibited of a species of Woodpecker hitherto undescribed, which has recently been obtained by Mr. Gould, from that little explored dis-

trict of California which borders the territory of Mexico. The exhibition was accompanied by a communication from Mr. Gould, in which, after some general remarks on the *Picidæ* and their geographical distribution, he referred to the species before the Committee as possessing the characters of the genus *Picus* in their most marked development, together with the greatest size hitherto observed in that group. In this respect it as far exceeds the *Ivory-billed Woodpecker* of the United States *Picus principalis*, as the latter does the *Picus martius* of Europe.

"This species is readily distinguishable from the *P. principalis*, by its much larger size, by the length of its occipital crest, the pendent silky feathers of which measure nearly four inches, by the absence of the white stripe which ornaments the neck of that bird, and by the bristles which cover its nostrils being black, whereas those of the *Picus principalis* are white."

These notices comprise, at present, all that is known of the largest and one of the handsomest of Woodpeckers. Its history, yet to be written, will be a highly interesting contribution to the ornithology of the United States.

Several specimens of this bird, in the collection of the Philadelphia Academy, are stated on their labels to be from Mexico, without other note or indication. All of them were obtained in Europe by our distinguished patrons, Messrs. Thomas B. and Edward Wilson.

The adult male is represented in the present plate. The female differs essentially only in having the crest black instead of scarlet.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS DRYOTOMUS. Swainson. Lardner's Cyclopaedia, Birds, II., p. 308. (1837.)

Size large; bill straight, long, wide at base, very strong; wings long, third and fourth quills usually longest; tail long, graduated, rigid; legs short; tarsi distinctly scaled; toes rather long, outer hind toe longest, claws strong, compressed; feathers of the head behind elongated and crest-like; colors generally black, white, and scarlet; contains species of both the old and new world, amongst which are the largest of the *Picidæ*.

DRYOTOMUS IMPERIALIS. (Gould.)

PICUS IMPERIALIS. Gould. Proc. Zool. Soc., London, 1832, p. 140.

FORM. The largest of Woodpeckers; bill long, wide at base, three distinct ridges on the upper mandible; wing long, primaries narrow, third and fourth longest; tail rather long, graduated, middle feathers longest; all the feathers of the tail narrow, rigid; tarsi moderate, strong, scales in front very distinct; toes long, claws strong, curved, compressed; general organization very strong; crest-like feathers long.

DIMENSIONS. Male. Total length (of skin) about 23 inches; wing $12\frac{1}{2}$; tail $9\frac{1}{2}$; bill to the corner of the mouth 4; tarsus 2 inches.

COLORS. Male. Elongated feathers of the head or crest, bright scarlet; interscapular feathers, outer two-thirds of secondaries, and inner edges of shorter primaries, white; under wing coverts white; all other parts of the plumage deep black, with a greenish lustre; bill yellowish-white; tarsi and toes dark; secondaries at their bases black; bristle-like feathers at the base of upper mandible black. Female similar to the male, but rather smaller, and with the crest black.

HAB. Oregon. California. Mexico. Spec. in Mus. Acad., Philada.

This gigantic Woodpecker is strictly of the same generic group as the well known Ivory-billed Woodpecker of the forests of the Southern States of this Union, and in some measure resembles it, but not in such degree as to be readily confounded. The present bird is considerably the larger, and is without the white stripes on the neck which are to be found in the Ivory-billed. In both species, the females have the elongated or crest-like feathers black.

It is quite remarkable that this fine species has not been brought by any of the naturalists or travellers who have visited, or at least passed through its native forests. This fact tends to demonstrate the truth of our views, occasionally expressed in the present volume, that we have much yet to learn of the Ornithology of Western America.



The short-tailed Shearwater.

On Stone by Wm. E. Hitchcock.

Dion. les brachyura Penn.

Lith. Printed & Col. by J. T. Bowen. Phil.

DIOMEDEA BRACHYURA. — TEMMINCK.

THE SHORT-TAILED ALBATROSS.

PLATE L. ADULT MALE.

THIS Albatross is the adult of the bird represented in plate 35, (the Black-footed Albatross, *Diomedea nigripes*, Aud.) of the present volume. At the time of the publication of the plate alluded to, and our article accompanying it, we were not aware of this identity; but having had our attention called to it by a distinguished European ornithologist, we have, on careful re-examination and comparison, fully confirmed its truth. So great a change taking place, however, in this bird, from early age to maturity, the two figures only fairly represent the species, of which that formerly given, as above, is the young bird.

The common occurrence of this species on the coasts of California and Oregon, was ascertained by the naturalists of the Exploring Expedition in the Vincennes and Peacock, under command of Captain Charles Wilkes, of the United States' Navy; and its addition to the ornithology of North America is one of many services to Zoology performed by that celebrated and most important Expedition. In fact, of the many similar undertakings of governments for the purposes of exploration and scientific research within the present century, the expedition alluded to stands pre-eminent in its contributions to Geographical and Zoological Science, a result to be attributed to the enlightened and judicious exertions of its distinguished Commander, and to the fact that it numbered amongst its naturalists several of the most accomplished Zoologists of America.

This Albatross probably inhabits the entire extent of the Pacific Ocean, from the northern coasts of America and Asia to Australia. It is given by Mr. Gould as a bird of the coast of Australia, though somewhat doubtfully, and is very probably the species sometimes mistaken for the Great Wandering Albatross (*D. exulans*), and found abundantly in the vicinity of the Kurile Islands and the coast of Kamtschatka, and other more southern coasts of Asia. It is smaller than the species just mentioned, but otherwise much resembles it. That species, though abundant in the southern hemisphere, does not apparently venture so far north as the present bird.

In a volume on Quadrupeds and Birds, by Mr. Titian R. Peale, which was printed and partially distributed as one of the valuable series of works on

the scientific results of the Exploring Expedition of the Vincennes and Peacock, we find the following in relation to the bird now before us:—

“Numbers of the Short-tailed Albatross were observed by the Expedition on the Northwest coast of America, and this species is believed to be a common inhabitant of all the Pacific Ocean, north of the Tropic of Cancer. Specimens vary as much, or perhaps more, from each other, than in the Wandering Albatross (*Diomedea exulans*), of the Southern Ocean, and require several years to attain to their perfect dress. The changes are regularly progressive. Until the second year the plumage remains of a dark sooty-brown color, with black feet, and dirty flesh-colored bills (which become black when the skins are dried), and in this state this bird pairs and raises its first young; after this, cloudy-white spots appear about the base of the bill, and white spots over and under the eyes; the rump begins to show a conspicuous spot of the same; and the bill turns yellow, with a tinge of carmine; the tip bluish; the legs are then flesh-colored; and, finally, the back, wings, and tail, become cinereous-brown; rump, head, and all the under parts pure white; a white margin shows along the back-edge of the wing in flight; and a cloudy-black spot generally remains in front of the eye. Thus, in some years, the plumage of the body is changed from nearly black to a pure snow-like white.

“On the 20th of December we found this species breeding on Wake's Island. The single egg of each pair was laid on the ground, in a slight concavity, without any lining material; both sexes take turns in the duties of incubation, and neither the male nor the female abandoned the nest on our approach, but walked around us in a very dignified manner, and made but a few demonstrations of defence with their beaks, when taken up in our arms. The eggs are white, of an oblong figure, nearly alike at both ends, and measure four and two-tenths inches long, and two and six-tenths inches in diameter.

“The two sexes are alike in plumage, and do not vary much in size, though the male is rather the larger.

“This bird is usually silent, but sometimes quarrels with its fellows over the offal thrown from ships, when it “brays” in much the same tone as a jackass. It is easily caught with a hook and line, but owing to its thick plumage and tenacity of life, it is difficult to kill it with shot.

“It was not our fortune to observe more than this one species of Albatross in the North Pacific. It is subject to great variations of plumage, as stated above, but is very distinct from the species of the Southern Hemisphere. The Wandering Albatross (*D. exulans*), and the Yellow-nosed (*D. chlororhynchus*), both of which, it has been asserted, have been sometimes found in the Northern Oceans, we believe, on the contrary, to be entirely restricted to the Southern hemisphere, or else they would sometimes be seen in crossing the intermediate tropical region. We saw both of those species, and also the Sooty Albatross (*D. fusca*), as far south as latitude 57° 41', which appeared

to be nearly their southern limit. Their northern limit of migration on the Atlantic shores of South America is somewhere about the River La Plata, and on the Pacific coasts about the southern parts of Peru."

In Dr. Pickering's Journal this bird is alluded to frequently, and especially as occurring at sea north of the Hawaiian Islands, and on the coast of Oregon. His observations agree with those by Mr. Peale, above quoted.

This species is given by Messrs. Temminck and Schlegel, as a bird of Japan, in their Fauna Japonica, and is well figured in its young plumage, but they give no account of its manners or history.

The figure in our plate represents the adult male, and was made from a specimen obtained on the coast of Kamtschatka, now in the Museum of the Philadelphia Academy, but precisely similar to others in the collection of the Exploring Expedition in the National Museum, Washington city.

DESCRIPTION AND TECHNICAL OBSERVATIONS.

GENUS DIOMEDEA. Linnæus. Syst. Nat., I., p. 214. (1766.)

DIOMEDEA BRACHYURA. Temm. Pl. col., V., p. (liv. 75, about 1828.)

DIOMEDEA NIGRIPES. Aud. Orn. Biog., V., p. 327. (1839.)

FORM. Very similar to *Diomedea exulans*, but much smaller; bill rather long, strong, abruptly hooked at the end; wings long, pointed, first quill longest; tail short; legs strong; toes long, fully webbed.

DIMENSIONS. Total length (of skin) about 28 inches; wing 20; tail 6 inches.

COLORS. Adult. Primaries, greater wing coverts, tips of secondaries and tertiaries, and upper edge of the wing brownish-black; tail white, tipped with dark brown. All other parts, including the head and entire body, white, usually in adult specimens tinged with pale yellow on the head and neck. Under wing coverts white; bill pale reddish-yellow (in prepared and dried specimen pale, dull yellow); legs pale flesh-color.

YOUNG. Entirely sooty-brown; lighter on the inferior parts of the body; bill and feet dark; in more advanced plumage, variously spotted with white, generally most observable around the base of the bill and on the rump.

HAB. Western coast of North America. Spec. in Mus. Acad. Philada.

Of the smaller species of the Albatrosses, this is the largest and next in size to the large *D. exulans*, which it much resembles in general appearance. It may always, however, be readily distinguished from any other species by the characters given above. Specimens occur in which the pale yellow tinge of the head and neck is not distinguishable, but usually it is a strongly marked character.

It was by our friend, that distinguished ornithologist, Gustav Hartlaub, M. D., Director of the Museum of the city of Bremen, that our attention

was first called to the fact of this bird and the Black-footed Albatross being identical, and a re-examination suggested. Not for this only are we indebted to the same gentleman, but for much advice and instruction most encouraging and valuable, and a constant assurance of good feeling, uninterrupted for years. Naturalists of all climes should work out their mission in harmony and fellowship. It is often not so,—would that all like Hartlaub cultivated and understood, as well as Science, kindness, friendship, justice.

But we are at the close of our volume. Like the traveller at the end of his day's journey, or the husbandman when the sun has sunk behind the hills, we willingly stop for repose, not without thoughts mainly, and perhaps necessarily, retrospective, but agreeable.

Reader! our barks have glided together for a period on the great stream which carries us alike to our future destiny. Thou hast been to me as a companion most pleasant, and an encourager. We have chatted, not always, perhaps, with sufficient reverence, or possibly sometimes frivolously, of the magnificence of our pathway,—of the mountain and the forest,—even of the birds that sing in the branches. By no means without dignity of subject,—the highest dignity attaches to all created things as the realized ideas of Omnipotence.

We could wish that some passages in our book were more clearly stated; but there is little that we would erase. We aspire to no perfection, much less have we accomplished any. Imperfection is a characteristic of mankind. Man exists in this world as an intellectual being, in a rudimental condition only.

Trust not too implicitly in the delights of the wilds, nor of solitude. They are temporary, and only to be as a teacher,—we must return ever to social life as the ark of safety, bringing, we may hope, the olive-branch of peace with knowledge. For all that I have said, or that any one else has said, our greatest and truest interests are in society. There only we acquire true cultivation and elevation. Science, Literature, Art, the great civilizers, there only flourish. Betake thyself not to the wilderness, or for a period only, and never longer than forty days,—never!—if there is any help for it.

We part now,—I would that it may be lover-like, oft promising to meet again, and hoping ever,—parted already, as it were, and distant, perhaps, by the length and breadth of our native land, or by the wide waters of the Atlantic,—from my heart I waft to thee a blessing and a farewell.

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From Prof. Henry B. Smith.

Union Theological Seminary.

It seems to me to be admirably adapted to its object, — erring neither on the score of redundancy nor deficiency. * * * The introduction of synonyms of etymologies and of proper names adds much to its value. **Clearness, conciseness, and remarkable adaptation to use, are among the valuable qualities of your work.** * * * I trust this volume may have the success it so richly deserves.

From the Rev. Dr. Collins,

President of Dickinson College, Carlisle, Pa.

Believing it to possess points of superiority over other dictionaries now in use, I take great pleasure in recommending it to public favor. Some of these points are the following:—

1. It is more *convenient in size*, and therefore *cheaper*, than the large dictionaries in general use.
2. The mass of references which encumber those dictionaries, without offering any real advantage to the student, is omitted, thereby enabling him *more readily to find what he wants*.
3. The significations are *thoroughly digested*, and presented in the natural order of their derivation; the primary being distinguished from the secondary and tropical by *type of fuller face*, so as to arrest the eye at a glance.
4. By omitting thus what is nearly useless to the learner, room is found to explain more fully than even in the larger dictionaries the difficult passages of those classic authors which are most commonly read in schools and colleges.
5. Proper names are so fully explained as in a great degree to supersede the necessity of a Dictionary of Classic Antiquities.
6. The differences of synonymous words, **for the first time in a Latin-English dictionary**, are here distinguished, and in such manner as to show the precise meaning better than is usually done by a lexicon of synonyms, or the scattered notes of editors.

